

Health Care Financing



Special Report

Rehospitalization by Geographic Area
for Aged Medicare Beneficiaries:
Selected Procedures, 1986-87

Volume 3

PUBS
RA
981
A2
H5753
1990
v.3



U.S. Department of Health and Human Services
Health Care Financing Administration
Office of Research and Demonstrations

Health Care Financing

Special Report

The Health Care Financing Administration (HCFA) was established to combine health financing and quality assurance programs within a single Agency. HCFA is responsible for the Medicare Program, Federal participation in the Medicaid program, and a variety of other health care quality assurance programs.

The mission of HCFA is to promote the timely delivery of appropriate and quality health care to the 29.0 million Medicare enrollees and the 21.6 million Medicaid recipients among the Nation's aged, disabled, and poor. The Agency must also ensure that program beneficiaries are aware of the services for which they are eligible, that those services are accessible and of high quality, and that Agency policies and actions promote efficiency and quality within the total health care delivery system.

The Office of Research and Demonstrations (ORD) conducts studies and projects that demonstrate and evaluate optional reimbursement,

coverage, eligibility, and management alternatives to the present Federal programs. In addition, ORD examines the impact of HCFA programs on health care status, utilization, and expenditures, as well as their effect on beneficiary access to services, health care providers, and the health care industry.

The Health Care Financing Special Report series presents single theme reports that provide in-depth coverage of an important issue in health care financing.

Rehospitalization by Geographic Area for Aged Medicare Beneficiaries: Selected Procedures, 1986-87 is part of HCFA's efforts to provide the public with information on the use of Medicare-covered services and outcomes of treatment, and how these vary among different geographic areas. This report should be useful in promoting further understanding of the reasons for geographic variations in the use of services and in generating hypotheses for additional research.

RA
981
.A2
H5753
1990
v.3
c.2

Health Care Financing

Special Report

Rehospitalization by
Geographic Area for Aged
Medicare Beneficiaries:
Selected Procedures,
1986-87

Volume 3

U.S. Department of Health and Human Services
Health Care Financing Administration
Office of Research and Demonstrations
Baltimore, Maryland 21207

HCFA Pub. 03303
June 1990

Acknowledgments

This report was prepared by the Office of Research and Demonstrations (ORD) and the Office of Statistics and Data Management (OSDM). Many staff members in the Division of Beneficiary Studies in ORD contributed to the design and analysis of the report. They include Marian Gornick, Division Director, and James Lubitz, Paul Eggers, Ph.D., Marshall McBean, M.D., Gerald Riley, James Beebe, Renee Mentnech, Alma McMillan, Delores Russell, and Howard Frazier, M.D., formerly of ORD and currently with Harvard University. Stephen Jencks, M.D., provided valuable advice in the development of the project. Ronald Prihoda and Michael Thomas, OSDM, were responsible for the production of the data. We also acknowledge the contribution of the physician specialists who participated in the expert panels to identify adverse events.

Contents

Introduction	1
Summary	7
Total hip replacement	19
Total knee replacement	65
Reduction of fracture of the femur	109
Replacement of the head of the femur	197
Total cholecystectomy	243
Partial excision of the large intestine	289
Coronary artery bypass graft	379
Percutaneous transluminal coronary angioplasty	453
Appendix. Reliability of estimates and testing for significant differences	529

Introduction

Published data on the outcomes of various kinds of treatment are often restricted to results of randomized controlled trials or to inhospital outcomes. Such data can have serious limitations for practicing clinicians for several reasons. Randomized controlled trials are usually conducted on carefully selected patients, who are frequently under 65 years of age and free of comorbidities. Often, providers are carefully selected for expertise. The generalizability of data from such studies can therefore be problematic. In addition, when a study is restricted to inhospital outcomes, complications that arise after discharge from the hospital are ignored.

Data on use of services by aged Medicare beneficiaries may be useful for illustrating the natural history of certain diseases and treatment alternatives in the aged population. The Medicare data presented here cover the hospital experience of almost the entire Medicare population 65 years of age or over.

The increase in surgery rates and the introduction of new surgical procedures for treating many frequently occurring conditions have been accompanied by concern about appropriateness, quality, and outcomes of surgical treatment. Surgical outcomes for older people are of special concern because surgical rates for persons 65 years of age or over have increased substantially more than rates for the population under age 65 have. Studies of variations among hospitals in surgical outcomes (National Academy of Sciences, 1966); geographic variations in rates of surgery (McPherson et al., 1982); and evidence of inappropriate surgery (Chassin et al., 1987) have added to the concern.

The purpose of this report is to present information on the outcomes for the aged population of eight important and frequently performed surgical procedures. Providing information for improving the quality and effectiveness of care for Medicare beneficiaries is a high priority of the Health Care Financing Administration, which, for the past 3 years, has published information on mortality following hospital admission for Medicare patients (Health Care Financing Administration, 1988).

The focus of this publication is on hospital readmissions after surgery, because information on this subject is a potentially useful tool in assessing the outcomes of hospital care. This volume follows two other publications in which hospitalization and

mortality rates are presented for a selected group of 26 diagnoses (Volume 1) and 14 procedures (Volume 2) (Health Care Financing Administration, 1990a, 1990b). The focus of the first two volumes is on patterns of hospital use, including variation across demographic and geographic groups. This publication is an extension of the first two volumes. Outcomes of hospital care following eight selected procedures are examined, with emphasis on demographic and geographic comparisons.

Roos et al. (1985) developed methods for identifying poor outcomes following three surgical procedures—prostatectomy, cholecystectomy, and hysterectomy—using data from the province of Manitoba, Canada. Wennberg et al. (1987) and Roos et al. (1989) used Medicare data and international data to measure the rates of reoperation and mortality following both transurethral and open prostatectomies. These studies demonstrated that claims data provide a low-cost way to measure outcomes over a long followup period.

In this report, information is presented on events during stays for surgeries and on readmissions that may represent adverse outcomes following eight procedures performed on aged Medicare beneficiaries in 1986 and 1987: total hip replacement, total knee replacement, reduction of fracture of the femur (transcervical and pertrochanteric fractures being reported separately), replacement of the head of the femur, total cholecystectomy, partial excision of the large intestine (cancer and noncancer patients being reported separately), coronary artery bypass graft, and percutaneous transluminal coronary angioplasty. Mortality data for patients undergoing these surgeries are also presented.

To facilitate comparison of results across different population subgroups and among local areas, information on these potentially adverse outcomes is presented by demographic characteristics, State, and metropolitan statistical area (MSA) or rural area. The information is based on data generated from the experience of Medicare beneficiaries 65 years of age or over. Information on individual hospitals is not reported.

We expect that these data will be useful for several purposes:

- To enable the health care community to better evaluate the natural history of these interventions.

- To allow organizations to compare the mortality and rehospitalization rate in a State or local area with the national experience.
- To enable hospitals to compare their individual rates for specific events, such as the rate of infectious complications, with rates for all Medicare beneficiaries in their area.

The original intent of this report was to focus on specific surgeries and to identify diagnoses and procedures associated with rehospitalizations that were likely to signal adverse outcomes of the surgery. As the report was being developed, however, analyses of data for the initial stay showed that certain secondary diagnoses might indicate adverse outcomes of the surgery. Consequently, data are presented here on diagnoses and procedures recorded both during the hospital stay in which the initial procedure was performed (referred to as the index stay) and during a hospital readmission. The conditions that these diagnostic and procedure data represent are referred to as adverse events. Information is also shown in this report on deaths occurring within 1 year of these procedures. Rates of these outcomes are presented for individual States and for MSAs and rural areas to facilitate comparison of results across geographic areas. Further developmental work would be required before this approach could be applied to monitoring outcomes at individual hospitals.

The rates of adverse events during the index stay and rates of readmissions for adverse events reported here do not necessarily correspond to the rates of adverse events that would result from a review of hospital records, from an interview with the patient, or from a review of records of ambulatory care following surgery. Despite the fact that different sources would produce different rates of adverse events, the data in this report should be useful for studying patterns of adverse events and for generating hypotheses about topics such as differences across areas in outcomes of surgery.

We chose the eight procedures presented in this volume because they are frequently performed on the elderly and were likely to provide sufficient numbers for analyses by MSA. Each procedure is normally performed in the hospital, so virtually all procedures performed are captured on inpatient hospital claims. These procedures are thought to be associated with a substantial number of adverse outcomes.

To identify diagnoses and procedures that constitute an adverse event, the Health Care Financing Administration convened three panels of physician specialists. One panel consisted of general surgeons (to address total cholecystectomy and partial excision of the large intestine); another panel consisted of orthopedic surgeons (for the

orthopedic procedures); and the third panel consisted of three cardiothoracic surgeons, a cardiologist, and an internist (for the cardiac procedures). The panelists identified adverse events that might be related to surgery and, for each event, defined the length of time following surgery that the event was likely to be related to surgery. For example, two of the three panels suggested that hospital readmissions involving pneumonia that occurred within 30 days of a procedure should be counted as probably related to surgery. The final lists of diagnoses and procedures indicating these events are defined along with their followup times in Table 1 of each section on individual procedures. Because of limits on the claims data available for followup for procedures that occurred in 1986 and 1987, the followup period is limited to a maximum of 1 year from the date of the index procedure.

The presence or absence of certain diagnoses and procedures during the index stay determined whether the stay was included in the study (Table A). For example, only total hip replacements with an accompanying principal diagnosis of osteoarthritis were included in the tables. This was done on the advice of the panelists to ensure that similar types of patients were followed within each procedure category.

Explanation of tables

Tables 2-4 of each procedure section contain rates of adverse events aggregated into several event groups. The event groups were designed to be clinically coherent and are different for each procedure. Tables 2-4 also contain information on deaths within a year of the procedure. Table 2 contains national rates of the event groups and deaths per 1,000 procedures, broken down by age, sex, and race groups. Table 3 contains similar data broken down by metropolitan and rural areas within States; Table 4 contains data for individual MSAs.

The following definitions pertain to Tables 2, 3, and 4 in each section.

Number of procedures—This is the number of procedures performed during the index stay. If a person underwent more than one of a given type of procedure in a single year, we selected only the first procedure for inclusion in the study as an index stay. Because a person can have only one index procedure, this count is synonymous with the number of persons undergoing the procedure.

Number per 1,000 enrollees—This is the number of procedures per 1,000 aged Medicare enrollees who were not HMO members and did not have end stage renal disease.

Table A. Selection criteria for study procedures performed on the Medicare aged

Procedure	ICD-9-CM procedure code(s)	ICD-9-CM diagnosis code(s)
Total hip replacement	Include 81.5 (principal)	Include 715 (principal)
Total knee replacement	Include 81.41 (principal)	Include 715 (principal)
Reduction of fracture of the femur:		
Petrochanteric	Include 79.15 or 79.35 (principal)	Include 820.2 (principal); exclude if the following are in any position: 733.42, 733.40, or 140-208
Transcervical	Include 79.15 or 79.35 (principal)	Include 820.0 or 820.8 (principal); exclude if the following are in any position: 733.42, 733.40, or 140-208
Replacement of the head of the femur	Include 81.61 or 81.62 (principal)	Include 820.0 or 820.8 (principal); exclude if the following are in any position: 733.42, 733.40, or 140-208
Total cholecystectomy	Include 51.22 (principal); exclude if 51.51 listed elsewhere	Include 574 or 575 (principal only); exclude if the following are in any position: 155, 156, or 157
Partial excision of the large intestine:		
With cancer	Include 45.7 (principal); exclude if 46.1 listed elsewhere	Include 153 or 154 (principal only)
Without cancer	Include 45.7 (principal); exclude if 46.1 listed elsewhere	Exclude if 153 or 154 is principal
Coronary artery bypass graft	Include DRG 106 or 107; exclude if the following codes are in any position: 36.01, 36.02, 37.6, 35.0-35.7, or 38.12	Exclude if the following are in any position: 443.89, 443.9, 414.1
Percutaneous transluminal coronary angioplasty	Include 36.01 or 36.02 (any position); exclude if the following codes are in any position: 35.0-35.7, 38.12, 37.6	Exclude if the following are in any position: 443.89, 443.9, 414.1

NOTES: ICD-9-CM is *International Classification of Diseases, 9th Revision, Clinical Modification*. DRG is diagnosis-related group.

SOURCE: Health Care Financing Administration, Office of Research and Demonstrations.

Average length of stay—This is the average length of the index stay in days.

Number of persons with 1 event or more per 1,000 procedures—This is the proportion of persons undergoing an index procedure who had one adverse event or more during their index stay times 1,000.

Number of persons dying within 1 year per 1,000 procedures—This is the proportion of persons undergoing an index procedure who died within a year of the procedure times 1,000.

Number of persons discharged alive—This is the number of live discharges.

Number of persons with 1 readmission or more within 90 days for any cause per 1,000 live discharges—This is the proportion of persons undergoing an index procedure and discharged alive who had 1 readmission to a hospital or more within 90 days of the index procedure times 1,000. Readmissions for all reasons, not just those associated with an adverse event, are included.

Number of persons with 1 readmission or more with an event per 1,000 live discharges—This is the proportion of persons undergoing an index procedure and discharged alive who had 1 readmission or more involving an adverse event times 1,000.

Number of readmissions with an event per 1,000 live discharges—This is a readmission rate, i.e., the

number of readmissions associated with an adverse event per 1,000 index live discharges. Data for major categories of adverse events for the procedure are given on this page of the table.

Data and methods

The data reported in this volume were derived primarily from the annual Medicare provider analysis and review (MEDPAR) files for 1986, 1987, and 1988. The MEDPAR file contains one record for each Medicare-covered stay in a short-stay hospital with a date of discharge in the applicable year. It contains dates of admission and discharge; up to five diagnoses, including a principal diagnosis; up to three procedures; and dates of the three procedures. The diagnoses and procedures are coded using the *International Classification of Diseases, 9th Revision, Clinical Modification*, or ICD-9-CM (Public Health Service and Health Care Financing Administration, 1980, 1986, and 1987). State and county of residence are also included on each record. Date of death, obtained from the Medicare enrollment files, is appended to the record so that deaths after discharge from the hospital can be identified. Enrollment data for the aged Medicare population by State and county were obtained from the Health Insurance Skeleton Write-Off file, which contains a

record for all Medicare beneficiaries entitled to services during a particular year, regardless of whether they used any services.

The MEDPAR files used for this volume contain data from all inpatient hospital bills received in the Medicare Statistical System through December 1988. These files are estimated to be at least 95-percent complete. Although the MEDPAR files we used are relatively complete overall, the degree of completeness varies somewhat by geographic area. The States where completeness of the MEDPAR files is estimated to be less than 95 percent are shown in Table B.

The MEDPAR files do not include a complete set of data on stays for Medicare enrollees who were members of health maintenance organizations (HMOs) because hospitalization data from HMOs are underreported in the Medicare Statistical System. Therefore, HMO members are excluded from the hospitalization data reported in this publication and from the enrollment data used in computing hospitalization rates.

Records of aged beneficiaries only are included in this volume; i.e., records of disabled enrollees under 65 years of age and persons entitled to Medicare solely because of end stage renal disease (ESRD) were excluded. In addition, records of aged beneficiaries with ESRD, who comprise less than 0.2 percent of the aged beneficiary population, were excluded. Aged beneficiaries comprise approximately 90 percent of the Medicare population. It is estimated that more than 95 percent of persons 65 years of age or over are covered by Medicare and thus included in these data.

The tables contain data on adverse events associated both with the index stay and with readmissions occurring within specific timeframes after the index procedure was performed. In identifying adverse events occurring during the index stay, we counted all diagnosis codes (up to five) associated with that stay. In identifying adverse events associated with readmissions, only principal diagnoses were counted. Additional

diagnoses were not counted because they may have represented adverse events arising during the readmissions and may not have been attributable to the index stay. To define adverse events, all procedure codes (up to three) in both the index stay and readmissions were examined.

It should be noted that the reporting of secondary diagnoses is believed to reflect hospital coding practices in terms of the number of additional diagnoses reported. Secondary diagnostic codes may contain bias that is not present in principal diagnosis codes, which are always reported. Thus, the rates of adverse events reported for the index stays should be interpreted with caution, particularly with respect to geographic comparisons.

With the exception of the cardiac procedures, index procedures were defined as those occurring during a stay identified in the calendar year 1986 MEDPAR file. Adverse events were counted for up to 1 year following the date of the index procedure, using both calendar year 1986 and 1987 MEDPAR files. For the cardiac procedures, we defined index procedures as those occurring during a stay with a discharge date in the 9-month period October 1, 1986, through June 30, 1987. (A 9-month base period was used instead of a 12-month period to have a full 12 months of followup data.) We could not accurately identify percutaneous transluminal coronary angioplasties (PTCAs) that took place before October 1, 1986, because the code for PTCA was also used for other procedures in the earlier time period. Adverse events were defined for up to 12 months following the date of the index procedure, i.e., through June 30, 1988, at the latest. Consequently, for the cardiac procedures, we used the 1986, 1987, and 1988 MEDPAR files.

The numbers and rates of index stays shown in this volume are not the same as those shown in Volume 2 for many reasons. As noted previously, data on the cardiac procedures are from the 9-month period October 1, 1986, through June 30, 1987—not from 1986, as in Volume 2. A number of exclusionary criteria were applied in selecting

Table B. States with Medicare provider analysis and review (MEDPAR) files less than 95-percent complete, by estimated percent completeness: Calendar years 1986-88

Estimated percent completeness	Year of MEDPAR file		
	Calendar year 1986	Calendar year 1987	Calendar year 1988
85-89 percent	District of Columbia, Michigan, North Carolina, Oregon	Alaska	Alabama, District of Columbia, Maryland, Texas
90-94 percent	Maryland, New York	Connecticut, District of Columbia, Michigan, Nevada, New Jersey, North Carolina, Pennsylvania	Alaska, Arizona, Hawaii, Pennsylvania, Virginia

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

index stays for Volume 3 that were not used for Volume 2. Finally, data for reduction of fracture of the femur are shown separately for transcervical and pertrochanteric fractures, and data on partial excision of the large intestine are shown separately for patients with and without cancer. Only totals for these two procedures are shown in Volume 2.

A transfer was defined as a stay whose admission date coincided with the discharge date of a stay in another hospital. When a transfer occurred following a readmission, only the principal diagnosis of the stay occurring in the transferring hospital was used to identify any adverse events. All procedure codes associated with both the stay in the transferring hospital and the stay in the second hospital were used in identifying adverse events, however. If the index stay was followed by a transfer, all diagnoses and procedures associated with the stay in the second hospital were used (as well as diagnoses and procedures associated with the stay in the first hospital) in identifying adverse events.

Tables 3 and 4 contain rates of adverse events by urban and rural areas within States and by MSA. MSAs are defined by the U.S. Bureau of the Census and consist of one county or more comprising a given metropolitan area. Adverse events are grouped into clinically coherent categories for ease of interpretation and to produce meaningful local area rates. It should be noted that each table contains data by area of residence of the beneficiaries, not place of service.

Area rates in Tables 3 and 4 have been annotated to show differences between an area rate and the U.S. rate that are significant at the 0.05 or 0.01 level. A single plus or minus sign indicates significance at the 0.05 level; two plus or minus signs indicate significance at the 0.01 level. A plus sign appended to an area rate can be loosely interpreted to mean that, if the area's true rate and the national rate do not differ and no time-dependent changes have occurred, then there is only a 5-percent chance that the area rate in the following year will be as small as the current U.S. rate. Similarly, a negative sign appended to a rate means that there is only a 5-percent chance that the area rate in the following year will be as large as the current U.S. rate.

The intent of this annotation is to highlight rates that may be unusually high or low while taking into account the element of chance. A more thorough description of this process as well as several cautions are discussed in the appendix. The user should neither automatically ignore rates that are not annotated nor automatically place undue importance on rates that are annotated. There are at least two reasons for this. First, a significance level

of 0.05 or smaller may be appropriate for the user whose interests lie primarily in identifying those areas most likely to have extreme values. However, for the user with an interest in a particular area, a less stringent significance level may be appropriate, especially if information on past rates led one to anticipate the approximate value of the current rate. In other words, a rate may be meaningfully different for some purposes even if the difference from the norm is not statistically significant at the 0.05 level. Second, significance tests are heavily dependent on sample size. Large differences may not be statistically significant if sample sizes are small. Thus, the difference should not be uncritically dismissed. Alternatively, with large samples, differences so small that they have no practical importance can show up as statistically significant.

Availability of data

Data in tables that appear in this volume will be available soon on diskettes for personal computers. Persons interested in obtaining additional information about the diskettes should contact: Publications and Information Resources Branch, Health Care Financing Administration, Room 1A9 Oak Meadows Building, 6325 Security Boulevard, Baltimore, Maryland 21207.

References

- Chassin, M.R., Kosecoff, J., Winslow, C.W., et al.: Does inappropriate use explain geographic variations in the use of health care services? A study of three procedures. *Journal of the American Medical Association* 258(18):2533-2537, Nov. 13, 1987.
- Health Care Financing Administration: *Medicare Hospital Mortality Information*, 1987. HCFA Pub. Nos. 00640-00646. Health Standards and Quality Bureau. Washington. U.S. Government Printing Office, 1988.
- Health Care Financing Administration: *Hospital Data by Geographic Area for Aged Medicare Beneficiaries: Selected Diagnostic Groups*, 1986. Volume 1. Special Report. HCFA Pub. No. 03300. Office of Research and Demonstrations. Washington. U.S. Government Printing Office, June 1990a.
- Health Care Financing Administration: *Hospital Data by Geographic Area for Aged Medicare Beneficiaries: Selected Procedures*, 1986. Volume 2. Special Report. HCFA Pub. No. 03301. Office of Research and Demonstrations. Washington. U.S. Government Printing Office, June 1990b.
- McPherson, K., Wennberg, J., Hovind, D., et al.: Small-area variations in the use of common surgical procedures: An international comparison of New England, England, and Norway. *New England Journal of Medicine* 307(21):1310-1314, 1982.

National Academy of Sciences, National Research Council, Subcommittee on the National Halothane Study of the Committee on Anesthesia: Summary of the national halothane study. *Journal of the American Medical Association* 197(10):121-134, Sept. 5, 1966.

Public Health Service and Health Care Financing Administration: *International Classification of Diseases, 9th Revision, Clinical Modification*. 2d ed. DHHS Pub. No. (PHS) 80-1260. Public Health Service. Washington. U.S. Government Printing Office, Sept. 1980.

Public Health Service and Health Care Financing Administration: *International Classification of Diseases, 9th Revision, Clinical Modification: Update*. HCFA Pub. No. 03233. Bureau of Data Management and Strategy. Washington. U.S. Government Printing Office, Oct. 1986.

Public Health Service and Health Care Financing Administration: *International Classification of Diseases, 9th Revision, Clinical Modification: Update*. HCFA Pub. No. 03259. Bureau of Data Management and Strategy. Washington. U.S. Government Printing Office, Oct. 1987.

Roos, L.L., Cageorge, S.M., Austen, E., and Lohr, K.: Using computers to identify complications after surgery. *American Journal of Public Health* 75(11):1288-1295, Nov. 1985.

Roos, N.P., Wennberg, J.E., Malenka, D.J., et al.: Mortality and reoperation after open and transurethral resection of the prostate for benign prostatic hyperplasia. *New England Journal of Medicine* 320(17):1120-1124, Apr. 27, 1989.

Wennberg, J.E., Roos, N., Sola, L., et al.: Use of claims data systems to evaluate health care outcomes. *Journal of the American Medical Association* 257(7):933-936, Feb. 20, 1987.

Summary

Information presented in this section is a summary of the data contained in the following sections on eight major procedures performed for Medicare enrollees 65 years of age or over. Two of these procedures were subdivided to form more homogeneous groups. Patients undergoing reduction of fracture of the femur were separated into those with pertrochanteric fractures and those with transcervical fractures; patients having partial excision of the large intestine were separated into those with cancer and those without cancer. The remaining six procedures are total hip replacement, total knee replacement, replacement of the head of the femur, total cholecystectomy, coronary artery bypass graft (CABG), and percutaneous transluminal coronary angioplasty (PTCA). Detailed data are provided on each procedure separately in the sections that follow. In this summary, we bring together the major findings from each section to compare results across the procedures.

Data in Tables 1-8 are shown by age, sex, and race. The number of aged Medicare enrollees and the number of times each procedure was performed are shown in Table 1. The rate of these procedures per 1,000 aged Medicare enrollees is shown in Table 2. The rate was highest for reduction of fracture of the femur (3.55 procedures per 1,000 enrollees) and lowest for PTCA (1.08 per 1,000).

For some procedures, the rate of operations increased as age increased; for others, the rate declined with advancing age. For some procedures, the middle age group, persons 75-84 years of age, experienced the highest rate of operations. The rate rose substantially with age for reduction of fracture of the femur and replacement of the head of the femur. However, the rate declined with age for CABG and PTCA, with few of these procedures being performed on those 85 years of age or over. In contrast, total hip replacement, total knee replacement, cholecystectomy, and partial excision of the large intestine were performed most frequently on persons aged 75-84 years.

Rates of operations were higher for women than for men except for three procedures—partial excision of the large intestine (patients with cancer), CABG, and PTCA. For all procedures, rates were higher for white persons than black persons.

Average length of stay (ALOS) is shown in Table 3. ALOS was highest for partial excision of the large intestine for persons without cancer

(16.68) and lowest for PTCA (7.49). ALOS generally increased with age. It was higher for women than men for all procedures except reduction of both types of fracture of the femur, replacement of the head of the femur, and total cholecystectomy. ALOS was higher for black persons than for white persons for every study procedure.

Table 4 is a summary of data on adverse events occurring during the index stay, when the surgery was performed. The number of persons with one adverse event or more in the index stay per 1,000 procedures was highest for reduction of pertrochanteric fracture of the femur (360) and lowest for PTCA (159). The rate of adverse events rose with age for all procedures except PTCA; for PTCA, the age group 75-84 years had the lowest rate. Men had higher rates of events in the index stay per 1,000 procedures than women for all procedures except total hip replacement, total knee replacement, and PTCA. The rate was virtually the same for men and women for reduction of pertrochanteric fracture of the femur. Black persons had higher rates of adverse events in the index stay per 1,000 procedures than white persons had for all procedures except reduction of pertrochanteric fracture of the femur and CABG.

In Table 5, total deaths for person 65 years of age or over are shown, as are death rates within 1 year for each procedure. The number of persons dying within 1 year per 1,000 procedures was higher than the national death rate per 1,000 persons for all but two of these procedures, total hip replacement and total knee replacement. The national death rate rose sharply with age. This was true of deaths within 1 year following every study procedure.

The 1-year death rate was higher for men than for women following all procedures except CABG, for which the death rate was higher for women, and PTCA, for which the rates were the same for men and women. Black persons had higher death rates within 1 year than white persons following all procedures except total knee replacement, for which the death rate was the same for both races.

Table 6 is a summary of the number of persons readmitted for any cause within 90 days per 1,000 patients discharged alive. This rate was highest for PTCA (267 persons per 1,000 live discharges) and lowest for total hip replacement (121 per 1,000). The rates of readmissions for any cause within 90 days rose with age for every procedure. Total

Table 1. Number of aged Medicare enrollees and number of selected procedures performed on aged enrollees, by age, sex, and race: United States, 1986 Index stays

Procedure	All persons ¹	Age			Sex		Race	
		65-74 years	75-84 years	85 years or over	Men	Women	White	Black
Number of enrollees	26,698,924	16,162,594	8,020,447	2,515,883	10,650,991	16,047,933	23,574,066	1,991,943
Number of procedures								
Total hip replacement	33,162	19,141	12,536	1,485	12,558	20,604	30,903	1,065
Total knee replacement	43,613	24,925	16,830	1,858	13,809	29,804	40,107	1,844
Reduction of fracture of the femur	94,820	18,296	39,454	37,070	19,211	75,609	88,818	2,860
Petrochanteric	75,101	13,207	31,117	30,777	15,135	59,966	70,392	2,181
Transcervical	19,719	5,089	8,337	6,293	4,076	15,643	18,426	679
Replacement of the head of the femur	43,063	8,451	19,410	15,202	8,117	34,946	40,176	1,437
Total cholecystectomy	94,056	57,205	29,859	6,992	35,218	58,838	85,837	4,199
Partial excision of the large intestine	75,211	36,334	29,973	8,904	31,394	43,817	67,777	4,602
With cancer	47,355	21,708	19,556	6,091	21,274	26,081	42,629	2,880
Without cancer	27,856	14,626	10,417	2,813	10,120	17,736	25,148	1,722
Coronary artery bypass graft ²	53,715	41,190	12,144	381	36,006	17,709	50,138	1,322
Percutaneous transluminal coronary angioplasty ²	28,817	22,071	6,367	379	16,843	11,974	26,837	750

¹Includes persons of other races in addition to white and black persons.

²Index stay during period October 1986-June 1987.

NOTE: Members of health maintenance organizations and persons with end stage renal disease are excluded.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2. Number of selected procedures performed per 1,000 aged Medicare enrollees, by age, sex, and race: United States, 1986 index stays

Procedure	All persons ¹	Age			Sex		Race	
		65-74 years	75-84 years	85 years or over	Men	Women	White	Black
Number of procedures per 1,000 enrollees								
Total hip replacement	1.24	1.18	1.56	0.59	1.18	1.28	1.31	0.53
Total knee replacement	1.63	1.54	2.10	0.74	1.30	1.86	1.70	0.93
Reduction of fracture of the femur	3.55	1.13	4.92	14.73	1.80	4.71	3.77	1.43
Petrochanteric	2.81	0.82	3.88	12.23	1.42	3.74	2.99	1.09
Transcervical	0.74	0.31	1.04	2.50	0.38	0.97	0.78	0.34
Replacement of the head of the femur	1.61	0.52	2.42	6.04	0.76	2.18	1.70	0.72
Total cholecystectomy	3.52	3.54	3.72	2.78	3.31	3.67	3.64	2.11
Partial excision of the large intestine	2.81	2.24	3.74	3.54	2.95	2.74	2.88	2.31
With cancer	1.77	1.34	2.44	2.42	2.00	1.63	1.81	1.45
Without cancer	1.04	0.90	1.30	1.12	0.95	1.11	1.07	0.86
Coronary artery bypass graft ²	2.01	2.55	1.51	0.15	3.38	1.10	2.13	0.66
Percutaneous transluminal coronary angioplasty ²	1.08	1.37	0.79	0.15	1.58	0.75	1.14	0.38

¹Includes persons of other races in addition to white and black persons.

²Index stay during period October 1986-June 1987.

NOTE: Members of health maintenance organizations and persons with end stage renal disease are excluded.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Average length of stay for aged Medicare enrollees undergoing selected procedures, by age, sex, and race: United States, 1986 Index stays

Procedure	All persons ¹	Age			Sex		Race	
		65-74 years	75-84 years	85 years or over	Men	Women	White	Black
Average length of stay in days								
Total hip replacement	12.83	12.24	13.51	14.74	12.33	13.13	12.78	14.57
Total knee replacement	12.89	12.45	13.40	14.28	12.21	13.21	12.79	15.18
Reduction of fracture of the femur:								
Pertrochanteric	14.85	14.17	15.00	14.98	15.15	14.77	14.76	17.33
Transcervical	13.09	11.97	13.15	13.93	13.75	12.92	13.00	15.70
Replacement of the head of the femur	14.52	14.18	14.46	14.80	15.46	14.31	14.44	16.67
Total cholecystectomy	10.07	8.92	11.28	14.36	10.55	9.78	9.98	12.10
Partial excision of the large intestine:								
With cancer	14.87	13.41	15.48	18.09	14.58	15.10	14.70	17.84
Without cancer	16.68	15.21	17.70	20.47	16.59	16.72	16.41	20.56
Coronary artery bypass graft ²	15.48	14.85	17.44	20.70	14.87	16.72	15.40	18.81
Percutaneous transluminal coronary angioplasty ²	7.49	7.13	8.59	10.43	6.98	8.21	7.42	9.87

¹Includes persons of other races in addition to white and black persons.

²Index stay during period October 1986-June 1987.

NOTE: Members of health maintenance organizations and persons with end stage renal disease are excluded.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Number of persons with 1 event or more in the Index stay per 1,000 procedures for aged Medicare enrollees, by age, sex, race, and procedure: United States, 1986 Index stays

Procedure	All persons ¹	Age			Sex		Race	
		65-74 years	75-84 years	85 years or over	Men	Women	White	Black
Number of persons with index-stay events per 1,000 procedures								
Total hip replacement	219	194	249	279	203	228	217	250
Total knee replacement	207	182	238	281	189	216	207	228
Reduction of fracture of the femur:								
Pertrochanteric	360	284	351	401	361	359	360	350
Transcervical	278	197	273	350	286	276	277	317
Replacement of the head of the femur	345	271	335	400	365	341	345	360
Total cholecystectomy	188	158	216	315	220	169	186	223
Partial excision of the large intestine:								
With cancer	177	155	184	231	182	173	176	203
Without cancer	247	225	260	315	261	239	244	302
Coronary artery bypass graft ²	308	301	329	391	310	302	308	273
Percutaneous transluminal coronary angioplasty ²	159	159	155	182	149	172	158	161

¹Includes persons of other races in addition to white and black persons.

²Index stay during period October 1986-June 1987.

NOTE: Members of health maintenance organizations and persons with end stage renal disease are excluded.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 5. Number of deaths per 1,000 persons and number of persons dying within 1 year of surgery per 1,000 procedures for aged Medicare enrollees, by age, sex, race, and procedure: United States, 1986 index stays

Procedure	All persons ¹	Age			Sex		Race	
		65-74 years	75-84 years	85 years or over	Men	Women	White	Black
Total deaths per 1,000 persons	51	28	63	154	60	45	51	56
Number of persons dying within 1 year per 1,000 procedures								
Total hip replacement	29	21	36	67	36	24	28	35
Total knee replacement	23	15	31	54	34	18	23	23
Reduction of fracture of the femur:								
Petrochanteric	223	128	195	291	317	199	222	248
Transcervical	195	98	179	294	304	166	193	246
Replacement of the head of the femur	212	122	189	291	345	181	210	276
Total cholecystectomy	75	46	99	207	96	63	74	99
Partial excision of the large intestine:								
With cancer	215	167	229	345	217	213	213	261
Without cancer	185	128	218	367	210	171	183	233
Coronary artery bypass graft ²	97	83	141	210	90	112	96	133
Percutaneous transluminal coronary angioplasty ²	72	58	110	230	72	72	71	95

¹Includes persons of other races in addition to white and black persons.

²Index stay during period October 1986-June 1987.

NOTE: Members of health maintenance organizations and persons with end stage renal disease are excluded.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 6. Number of persons with 1 readmission or more for any cause within 90 days of surgery per 1,000 live discharges for aged Medicare enrollees, by age, sex, race, and procedure: United States, 1986 index stays

Procedure	All persons ¹	Age			Sex		Race	
		65-74 years	75-84 years	85 years or over	Men	Women	White	Black
Number of persons readmitted within 90 days per 1,000 live discharges								
Total hip replacement	121	111	131	170	135	113	121	129
Total knee replacement	127	117	137	164	136	122	126	130
Reduction of fracture of the femur:								
Petrochanteric	173	151	174	183	222	162	173	200
Transcervical	172	145	182	183	226	159	170	233
Replacement of the head of the femur	182	156	185	194	240	170	181	239
Total cholecystectomy	132	113	154	203	157	118	132	150
Partial excision of the large intestine:								
With cancer	181	174	182	203	196	169	181	187
Without cancer	217	205	228	249	227	212	217	224
Coronary artery bypass graft ²	234	222	271	299	218	265	233	280
Percutaneous transluminal coronary angioplasty ²	267	259	293	355	256	283	268	267

¹Includes persons of other races in addition to white and black persons.

²Index stay during period October 1986-June 1987.

NOTE: Members of health maintenance organizations and persons with end stage renal disease are excluded.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

cholecystectomy had the greatest increase with age, with the readmission rate rising almost 80 percent from the age group 65-74 years to the age group 85 years or over. Men were readmitted within 90 days more often than women for all procedures except CABG and PTCA. Black persons were readmitted within 90 days more often than white

persons for all procedures except PTCA, for which the rate was virtually the same for both races.

Table 7 is a summary of the number of persons per 1,000 discharges with one readmission or more with an adverse event. This rate was highest for PTCA (357 persons per 1,000 live discharges) and lowest for total cholecystectomy (40 per 1,000).

Table 7. Number of persons with 1 readmission or more with an event per 1,000 live discharges for aged Medicare enrollees, by age, sex, race, and procedure: United States, 1986 index stays

Procedure	All persons ¹	Age			Sex		Race	
		65-74 years	75-84 years	85 years or over	Men	Women	White	Black
Number of persons readmitted with an event per 1,000 live discharges								
Total hip replacement	60	56	66	71	63	58	61	60
Total knee replacement	57	57	57	67	57	57	57	56
Reduction of fracture of the femur:								
Petrochanteric	56	58	57	54	62	55	56	67
Transcervical	89	97	95	73	90	88	89	82
Replacement of the head of the femur	66	62	68	66	82	62	66	84
Total cholecystectomy	40	36	44	59	49	35	41	36
Partial excision of the large intestine:								
With cancer	56	59	55	50	56	57	57	52
Without cancer	70	72	68	64	71	69	69	85
Coronary artery bypass graft ²	202	193	232	249	185	238	201	258
Percutaneous transluminal coronary angioplasty ²	357	353	365	441	344	375	357	359

¹Includes persons of other races in addition to white and black persons.

²Index stay during period October 1986-June 1987.

NOTE: Members of health maintenance organizations and persons with end stage renal disease are excluded.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 8. Number of readmissions for infectious complications related to surgery per 1,000 live discharges for aged Medicare enrollees, by age, sex, race, and procedure: United States, 1986 index stays

Procedure	All persons ¹	Age			Sex		Race	
		65-74 years	75-84 years	85 years or over	Men	Women	White	Black
Number of readmissions for infectious complications per 1,000 live discharges								
Total hip replacement	11	10	11	11	11	11	11	9
Total knee replacement	24	24	24	24	25	23	24	17
Reduction of fracture of the femur:								
Petrochanteric	17	15	17	19	27	15	17	23
Transcervical	14	11	16	15	24	11	14	14
Replacement of the head of the femur	21	18	22	22	36	18	21	26
Total cholecystectomy	8	7	9	15	10	7	8	9
Partial excision of the large intestine:								
With cancer	9	8	9	11	9	9	9	8
Without cancer	11	11	12	13	14	10	11	10

¹Includes persons of other races in addition to white and black persons.

NOTE: Members of health maintenance organizations and persons with end stage renal disease are excluded.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

The rate increased with age for all procedures except reduction of fracture of the femur (both types of fracture), replacement of the head of the femur, and partial excision of the large intestine (with and without cancer). Patterns by sex and race were mixed.

The number of readmissions for infectious complications related to surgery per 1,000 persons discharged alive is shown for six of the eight procedures in Table 8. The infectious complications

event group was defined similarly for these six procedures but differently for CABG and PTCA. This rate was highest for total knee replacement (24 readmissions per 1,000 persons discharged alive) and lowest for total cholecystectomy (8 per 1,000). The rate for total cholecystectomy more than doubled from the youngest to the oldest age group (7 persons per 1,000 live discharges aged 65-74 years versus 15 per 1,000 for those 85 years of age or over). The rate increased only slightly

Table 9. Number of readmissions with an event per 1,000 live discharges for aged Medicare enrollees undergoing selected cardiac procedures, by event group and age: United States, 1986-87 index stays

Index procedure and age	Event group			
	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease	Other cardiac events	Subsequent percutaneous transluminal coronary angioplasty	Subsequent coronary artery bypass graft
Number of readmissions per 1,000 live discharges				
Coronary artery bypass graft				
All persons	50	130	8	3
65-74 years	49	121	8	4
75-84 years	55	158	7	2
85 years or over	75	195	6	0
Percutaneous transluminal coronary angioplasty				
All persons	129	81	140	61
65-74 years	118	71	146	66
75-84 years	162	108	118	49
85 years or over	260	183	133	18

NOTE: Members of health maintenance organizations and persons with end stage renal disease are excluded.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 10. Number of aged Medicare enrollees and number of selected procedures performed on aged enrollees, by region: United States, 1986 Index stays

Procedure	United States	Northeast	North Central	South	West
Number of enrollees	26,698,924	6,276,897	6,901,975	8,980,101	4,539,951
Number of procedures					
Total hip replacement	33,162	6,655	10,605	8,770	7,132
Total knee replacement	43,613	7,724	14,514	13,105	8,270
Reduction of fracture of the femur	94,820	21,315	25,399	32,111	15,995
Petrochanteric	75,101	17,005	20,583	25,149	12,364
Transcervical	19,719	4,310	4,816	6,962	3,631
Replacement of the head of the femur	43,063	8,488	12,401	14,930	7,244
Total cholecystectomy	94,056	19,158	25,528	34,950	14,420
Partial excision of the large intestine	75,211	19,006	20,070	23,870	12,265
With cancer	47,355	12,458	12,595	14,769	7,533
Without cancer	27,856	6,548	7,475	9,101	4,732
Coronary artery bypass graft ¹	53,715	10,316	14,451	19,263	9,685
Percutaneous transluminal coronary angioplasty ¹	28,817	3,898	8,556	9,957	6,406

¹Index stay during period October 1986-June 1987.

NOTE: Members of health maintenance organizations and persons with end stage renal disease are excluded.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

with age for the remaining procedures except total knee replacement, which had a rate of 24 per 1,000 for all age groups. The rate of readmissions for infectious complications was higher for men than for women for all procedures except total hip replacement. The pattern by race was mixed.

In Table 9, data are presented on CABG and PTCA, which are both done for heart revascularization. The numbers of readmissions for four adverse event groups per 1,000 persons discharged alive are summarized by age. Except for other cardiac events, the readmission rate for all of the event groups shown in Table 9 was substantially greater following PTCA than

following CABG. For both PTCA and CABG, the rate of readmissions rose with age for the first two event groups—angina, acute myocardial infarction (AMI), and other acute and subacute ischemic heart disease and other cardiac events.

Data in Tables 10-18 are shown by census region. The number of Medicare enrollees and the number of procedures are shown in Table 10; the rate of these procedures per 1,000 aged Medicare enrollees is shown in Table 11. The North Central Region tended to have high rates of procedures performed per 1,000 enrollees, and the Northeast Region tended to have low rates.

Table 11. Number of selected procedures performed per 1,000 aged Medicare enrollees, by region: United States, 1986 index stays

Procedure	United States	Northeast	North Central	South	West
Number of procedures per 1,000 enrollees					
Total hip replacement	1.24	1.06--	1.54++	0.98--	1.57++
Total knee replacement	1.63	1.23--	2.10++	1.46--	1.82++
Reduction of fracture of the femur	3.55	3.40	3.68	3.58	3.52
Petrochanteric	2.81	2.71--	2.98++	2.80	2.72--
Transcervical	0.74	0.69--	0.70--	0.78++	0.80++
Replacement of the head of the femur	1.61	1.35--	1.80++	1.66++	1.60
Total cholecystectomy	3.52	3.05--	3.70++	3.89++	3.18--
Partial excision of the large intestine	2.81	3.02	2.90	2.66	2.70
With cancer	1.77	1.98++	1.82++	1.65--	1.66--
Without cancer	1.04	1.04	1.08++	1.01--	1.04
Coronary artery bypass graft ¹	2.01	1.64--	2.09++	2.15++	2.13++
Percutaneous transluminal coronary angioplasty ¹	1.08	0.62--	1.24++	1.11++	1.41++

¹Index stay during period October 1986-June 1987.

NOTES: Members of health maintenance organizations and persons with end stage renal disease are excluded. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 12. Average length of stay for aged Medicare enrollees undergoing selected procedures, by region: United States, 1986 index stays

Procedure	United States	Northeast	North Central	South	West
Average length of stay in days					
Total hip replacement	12.83	14.64	12.71	13.18	10.88
Total knee replacement	12.89	14.78	12.78	13.20	10.85
Reduction of fracture of the femur:					
Petrochanteric	14.85	20.02	13.21	14.21	11.76
Transcervical	13.09	17.64	11.88	12.58	10.27
Replacement of the head of the femur	14.52	19.45	13.42	13.95	11.82
Total cholecystectomy	10.07	11.55	9.93	10.07	8.35
Partial excision of the large intestine:					
With cancer	14.87	16.98	14.58	14.71	12.16
Without cancer	16.68	19.96	16.12	16.20	13.92
Coronary artery bypass graft ¹	15.48	17.12	15.68	15.37	13.63
Percutaneous transluminal coronary angioplasty ¹	7.49	8.73	7.72	7.79	5.96

¹Index stay during period October 1986-June 1987.

NOTE: Members of health maintenance organizations and persons with end stage renal disease are excluded.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 12 is a summary of ALOS by region. For every study procedure, the Northeast had the highest ALOS, and the West had the lowest. ALOS was similar for the North Central and South. Regional differences were greatest for reduction of fracture of the femur, replacement of the head of the femur, and partial excision of the large intestine (patients without cancer); for each of these procedures, the difference between ALOS for the Northeast and West was 6-8 days.

Table 13 is a summary of the number of Medicare enrollees with one event or more during the index stay per 1,000 procedures. The Northeast had the highest rate for all procedures except CABG and PTCA. For these two procedures, rates were highest in the West. The South had the lowest

rate for all procedures except CABG and PTCA; for these two procedures, rates were lowest in the North Central. As discussed in the introduction, rates of possible adverse events in the index stay may reflect, to some degree, variations in coding completeness across areas; that is, the reporting of the actual occurrence of such events may not be fully reliable.

Table 14 is a summary of deaths within 1 year following each procedure. Death rates across regions had a range of less than 15 percent for all procedures except three—total hip replacement, total knee replacement, and PTCA. For these three procedures, the difference across regions between the highest and lowest rates was about 25 percent.

Table 13. Number of persons with 1 event or more in the index stay per 1,000 procedures for aged Medicare enrollees, by region and procedure: United States, 1986 index stays

Procedure	United States	Northeast	North Central	South	West
Number of persons with index-stay events per 1,000 procedures					
Total hip replacement	219	255++	212	201--	217
Total knee replacement	207	253++	202	185--	211
Reduction of fracture of the femur:					
Petrochanteric	360	400++	366+	330--	354
Transcervical	278	313++	284	257--	269
Replacement of the head of the femur	345	383++	353	322--	334-
Total cholecystectomy	188	202++	194+	171--	199++
Partial excision of the large intestine:					
With cancer	177	192++	182	161--	176
Without cancer	247	270++	249	224--	257
Coronary artery bypass graft ¹	308	329++	279--	286--	370++
Percutaneous transluminal coronary angioplasty ¹	159	157	146--	153	185++

¹Index stay during period October 1986-June 1987.

NOTES: Members of health maintenance organizations and persons with end stage renal disease are excluded. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 14. Number of deaths per 1,000 persons and number of persons dying within 1 year of surgery per 1,000 procedures for aged Medicare enrollees, by region and procedure: United States, 1986 index stays

Procedure	United States	Northeast	North Central	South	West
Total deaths per 1,000 persons	51	53+	52+	51	48-
Number of persons dying within 1 year per 1,000 procedures					
Total hip replacement	29	26	26	32	30
Total knee replacement	23	23	20-	25	25
Reduction of fracture of the femur:					
Petrochanteric	223	223	220	224	223
Transcervical	195	187	199	200	188
Replacement of the head of the femur	212	216	212	212	205
Total cholecystectomy	75	79+	75	74	73
Partial excision of the large intestine:					
With cancer	215	216	226++	209	208
Without cancer	185	203++	181	178	181
Coronary artery bypass graft ¹	97	99	90--	103++	94
Percutaneous transluminal coronary angioplasty ¹	72	59--	74	74	74

¹Index stay during period October 1986-June 1987.

NOTES: Members of health maintenance organizations and persons with end stage renal disease are excluded. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 15. Number of persons with 1 readmission or more for any cause within 90 days of surgery per 1,000 live discharges for aged Medicare enrollees, by region and procedure: United States, 1986 Index stays

Procedure	United States	Northeast	North Central	South	West
Number of persons readmitted within 90 days per 1,000 live discharges					
Total hip replacement	121	110--	117	133++	122
Total knee replacement	127	126	119--	132	133
Reduction of fracture of the femur:					
Pertrochanteric	173	159--	166--	190++	171
Transcervical	172	148--	174	188++	169
Replacement of the head of the femur	182	175	181	191++	176
Total cholecystectomy	132	131	127-	137+	133
Partial excision of the large intestine:					
With cancer	181	173-	189+	185	171-
Without cancer	217	218	229+	211	209
Coronary artery bypass graft ¹	234	229	242+	238	216--
Percutaneous transluminal coronary angioplasty ¹	267	265	267	269	267

¹Index stay during period October 1986-June 1987.

NOTES: Members of health maintenance organizations and persons with end stage renal disease are excluded. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 16. Number of persons with 1 readmission or more with an event per 1,000 live discharges for aged Medicare enrollees, by region and procedure: United States, 1986 Index stays

Procedure	United States	Northeast	North Central	South	West
Number of persons readmitted with an event per 1,000 live discharges					
Total hip replacement	60	53--	57	67+	64
Total knee replacement	57	56	53-	62+	57
Reduction of fracture of the femur:					
Pertrochanteric	56	49--	55	61++	60
Transcervical	89	84	88	91	92
Replacement of the head of the femur	66	58--	65	72++	65
Total cholecystectomy	40	42	38-	41	41
Partial excision of the large intestine:					
With cancer	56	50--	59	55	63+
Without cancer	70	64	68	72	77
Coronary artery bypass graft ¹	202	206	205	203	194-
Percutaneous transluminal coronary angioplasty ¹	357	357	352	370++	341--

¹Index stay during period October 1986-June 1987.

NOTES: Members of health maintenance organizations and persons with end stage renal disease are excluded. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

The number of persons with readmissions for any cause within 90 days per 1,000 live discharges is shown in Table 15. The number of persons readmitted with an event per 1,000 live discharges is shown in Table 16. The rates for both types of readmissions tended to be high in the South and low in the Northeast.

The numbers of readmissions for infectious complications per 1,000 persons discharged alive are summarized for six of the eight procedures in Table 17. The South tended to have the highest rates of infectious complications for these procedures. The lowest rates were generally in the Northeast.

Table 18 contains information on the number of readmissions for four adverse event groups after index procedures of CABG and PTCA. Readmissions for the first event group (angina,

AMI, and other acute and subacute ischemic heart disease) after an index stay of either CABG or PTCA were significantly higher than average in the Northeast and lower in the West. Subsequent PTCA after an index stay for CABG was significantly higher than average in the West and lower in the Northeast.

Correlations between five separate sets of measures across all procedures are shown in Table 19. The correlations were calculated using rates for metropolitan statistical areas and rural areas. The first set of correlations was calculated to explore the relationship of ALOS to events in the index stay and readmissions. The correlation between the number of persons with one event or more during the index stay per 1,000 procedures and ALOS was statistically significant and positive for all procedures except CABG and PTCA. This

Table 17. Number of readmissions for infectious complications related to surgery per 1,000 live discharges for aged Medicare enrollees, by region and procedure: United States, 1986 Index stays

Procedure	United States	Northeast	North Central	South	West
Number of readmissions for infectious complications per 1,000 live discharges					
Total hip replacement	11	11	11	12	7--
Total knee replacement	24	24	20--	27+	25
Reduction of fracture of the femur:					
Pertrochanteric	17	15-	17	19	18
Transcervical	14	10--	12	18+	15
Replacement of the head of the femur	21	19	19	25+	21
Total cholecystectomy	8	8	8	8	8
Partial excision of the large intestine:					
With cancer	9	7-	10	10	8
Without cancer	11	10	11	12	12

NOTES: Members of health maintenance organizations and persons with end stage renal disease are excluded. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 18. Number of readmissions with an event per 1,000 live discharges for aged Medicare enrollees undergoing selected cardiac procedures, by event group and region: United States, 1986-87 Index stays

Index procedure and region	Event group			
	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease	Other cardiac events	Subsequent percutaneous transluminal coronary angioplasty	Subsequent coronary artery bypass graft
Number of readmissions per 1,000 live discharges				
Coronary artery bypass graft				
United States	50	130	8	3
Northeast	61++	136	5--	4
North Central	46	133	8	3
South	50	130	6-	2
West	44--	118--	11++	4
Percutaneous transluminal coronary angioplasty				
United States	129	81	140	61
Northeast	172++	79	128	56
North Central	119-	84	138	60
South	131	76	140	60
West	112--	84	148	69+

NOTES: Members of health maintenance organizations and persons with end stage renal disease are excluded. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 19. Correlation coefficients for selected procedures for aged Medicare enrollees: United States, 1986 index stays

Procedure	Persons with 1 event or more in index stay and ALOS	Readmissions with an event and ALOS	Readmissions within 90 days and ALOS	Persons with 1 event or more in index stay and persons with 1 readmission or more with an event	Deaths within 1 year of surgery and persons with 1 readmission or more with an event
	Correlation coefficient				
Total hip replacement	*0.230	-0.139	-0.098	-0.012	*0.356
Total knee replacement	*0.295	0.073	-0.049	-0.055	0.110
Reduction of fracture of the femur:					
Petrochanteric	*0.322	*-0.263	-0.041	0.069	0.025
Transcervical	*0.323	-0.134	-0.137	-0.153	-0.050
Replacement of the head of the femur	*0.300	*-0.322	-0.007	*-0.211	0.101
Total cholecystectomy	*0.143	-0.126	0.072	0.091	0.091
Partial excision of the large intestine:					
With cancer	*0.247	*-0.308	*0.103	0.085	0.070
Without cancer	*0.271	-0.146	0.236	0.063	0.013
Coronary artery bypass graft ¹	-0.037	*0.161	*0.232	0.091	0.123
Percutaneous transluminal coronary angioplasty ¹	0.050	-0.049	0.076	-0.031	0.027

*Significant at the $p \leq 0.05$ level.

¹For period October 1986-June 1987.

NOTES: Members of health maintenance organizations and persons with end stage renal disease are excluded. ALOS is average length of stay.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

may indicate a tendency for areas with longer ALOS to have more events in the index stay because there is more time for such events to occur and be recorded.

The correlation between the number of persons with one readmission or more with an adverse event per 1,000 live discharges and ALOS was statistically significant and negative for reduction of petrochanteric fracture of the femur, replacement of the head of the femur, and partial excision of the large intestine for persons with cancer. This correlation was statistically significant and positive for CABG. The correlation between the number of persons with one readmission or more for any cause within 90 days per 1,000 live discharges and ALOS was statistically significant and positive only for partial excision of the large

intestine for persons with cancer and CABG.

The last two correlations were calculated to explore the relationship of rates of readmissions with an event to rates of index stay events and death rates. The correlation between the number of persons with one event or more per 1,000 procedures and the number of persons with one readmission or more with an adverse event per 1,000 live discharges was statistically significant and negative for only one procedure, replacement of the head of the femur. The correlation between the number of persons dying within 1 year of surgery per 1,000 procedures and the number of persons with one readmission or more with an adverse event per 1,000 live discharges was statistically significant and positive only for total hip replacement.

Total hip replacement

Total hip replacement is most frequently performed for osteoarthritis, which causes deterioration of the hip joint. To enable comparisons among demographic and geographic groups, data are presented on only those total hip replacements for which the principal diagnosis associated with the hospital stay was ICD-9-CM code 715, osteoarthritis and allied disorders.

In 1986, 33,162 hospital stays for total hip replacement met the study criteria. These 33,162 cases represent a rate of 1.24 procedures per 1,000 aged Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations.

Rates for specific events

The ICD-9-CM codes that were used for selecting cases for this study are provided in Table 1. The diagnoses (with their ICD-9-CM codes) that were identified with the aid of a panel of orthopedic surgeons as signifying potential adverse outcomes following total hip replacement are also listed. The conditions represented by these diagnoses are referred to as adverse events. The focus of this study is on adverse events occurring both in the index stay, when the surgery was performed, and in subsequent admissions. The adverse events are categorized into four event groups:

1. Noninfectious problems related to the hip.
2. Infectious complications related to surgery.
3. General surgical complications.
4. Other events.

These categories are similar to those used in the section on total knee replacement.

Table 1 also includes information on which codes were counted as adverse events if they occurred in the index stay, which codes were counted if they were the principal diagnosis for a readmission following total hip replacement, and the time interval required in order to include a readmission (for example, within 30 days of the date of surgery).

As noted in the introduction, Medicare claims files for hospital stays contain up to five diagnosis codes and three procedure codes. For this study, all five diagnosis positions and all three procedure

positions were considered in counting events during the index stay. For readmissions, all three procedure positions were considered, but only the principal diagnosis was examined to identify adverse events.

During the index stay, 271.27 events occurred per 1,000 procedures. Of these, only 7.18 per 1,000 involved Event Group 1, noninfectious problems related to the hip. The most common event in this group was other complications of internal prosthetic device, implant, and graft (3.59 per 1,000). Dislocation of the hip occurred at a rate of 2.44 per 1,000 procedures, and fracture of shaft or unspecified part of femur, closed, occurred at a rate of 1.15 per 1,000.

For patients with total hip replacement, 90.83 events in the index stay per 1,000 procedures were categorized as infectious complications related to surgery (Event Group 2). More than one-half of these (59.53 events per 1,000 procedures) were for urinary tract infection, site not specified. The other most common conditions in this event group were respiratory complications (11.58 per 1,000) and postoperative infection (10.49 per 1,000).

The most common category of adverse events in the index stay for hip replacement patients was Event Group 3, general surgical complications, with 172.55 events per 1,000 procedures. Acute posthemorrhagic anemia accounted for nearly one-third of these (56.69 per 1,000). The next most common complications in this event group were other specified complications of procedures, not elsewhere classified (20.11 per 1,000) and retention of urine (19.15 per 1,000). These patterns are similar to those displayed by persons undergoing total knee replacement.

The total number of readmissions with adverse events is also shown in Table 1. There were 75.50 such readmissions per 1,000 persons discharged alive with hip replacements. The principal diagnoses for these readmissions were partitioned according to the major event groups described previously. Although relatively rare in the index stay, Event Group 1, noninfectious problems related to the hip, constituted the most common category of events associated with readmissions, accounting for more than one-half of all event-related readmissions (47.76 readmissions per 1,000 persons discharged alive). The most common events within this group were early (within 90 days) and late (91 days-1 year) mechanical complications of internal orthopedic device,

NOTE: For total hip replacement, records of hospital stays with principal ICD-9-CM procedure code 81.5 and principal ICD-9-CM diagnosis code 715 were selected.

implant, and graft (25.49 per 1,000 and 15.96 per 1,000, respectively). Dislocation of hip occurred at a rate of 3.61 readmissions per 1,000 persons discharged alive.

Readmissions for Event Group 2, infectious complications related to surgery, occurred at a rate of 10.56 per 1,000 persons discharged alive. The most common event within this group was infection and inflammatory reaction due to internal prosthetic device, implant, and graft (4.61 per 1,000). There were 2.67 readmissions for postoperative infection per 1,000 persons discharged alive.

Readmissions for Event Group 3, general surgical complications, occurred at a rate of 17.18 per 1,000 persons discharged alive. The most common event was pulmonary embolism and infarction (4.13 per 1,000). Other relatively common events were phlebitis and thrombophlebitis (3.34 per 1,000), peripheral vascular complications (2.82 per 1,000), and other venous embolism and thrombosis (2.58 per 1,000).

Patterns by age, sex, and race

Table 2 contains information on outcomes following total hip replacement for all persons combined and by age, sex, and race. Among persons hospitalized for total hip replacement, the number dying within 1 year was 29 persons per 1,000 procedures, or 2.9 percent. This is a relatively low death rate compared with that for the other procedures studied and likely reflects the elective nature of the procedure. Of the 33,162 cases with this procedure, 32,954 persons, or 99.4 percent, were discharged alive. The average length of stay (ALOS) during the index stay was 12.83 days. Of every 1,000 persons undergoing this procedure, 219 experienced one adverse event or more during the index stay, and 60 persons per 1,000 were readmitted at least once with an adverse event. Of every 1,000 persons undergoing total hip replacement and discharged alive, 121 were readmitted at least once for any cause within 90 days of surgery.

The highest rate of total hip replacement was for persons aged 75-84 years (1.56 procedures per 1,000 enrollees); the lowest rate was for those 85 years or over (0.59 per 1,000). ALOS increased slightly with age, from 12.24 days for those aged 65-74 years to 14.74 days for those aged 85 years or over. The number of persons experiencing one adverse event or more during the index stay increased with age, rising from 194 persons per 1,000 procedures for those aged 65-74 years to 279 persons per 1,000 procedures for the group aged 85 years or over.

Deaths within a year of surgery also increased substantially with age. The rate rose from 21 deaths per 1,000 procedures for persons aged 65-74 years to 67 deaths per 1,000 procedures for those 85 years or over. Readmissions for any cause within 90 days of the procedure per 1,000 persons discharged alive increased from 111 for persons aged 65-74 years to 170 for persons 85 years or over. Readmissions for all types of adverse events combined increased with age, rising from 69 readmissions per 1,000 live discharges in the age group 65-74 years to 90 per 1,000 in the age group 85 years or over. Readmissions associated with Event Group 1, noninfectious problems related to the hip, also increased with age, but rates of other types of adverse events did not.

Total hip replacement was performed in 1986 at a similar rate for women as for men, 1.28 procedures per 1,000 women versus 1.18 per 1,000 men. On average, women remained in the hospital slightly longer during the index stay than did men (13.13 days versus 12.33 days). More women than men experienced adverse events during the index stay (228 persons per 1,000 procedures performed for women versus 203 for men). However, death within a year of surgery and readmission within 90 days of surgery were more common among men in all age groups. Readmissions involving Event Group 1, noninfectious problems related to the hip, per 1,000 persons discharged alive were higher among men, particularly in the oldest age group. The rates for the other two event groups were the same for men and women.

Total hip replacement was performed more frequently on white persons (1.31 procedures per 1,000 white enrollees) than on black persons (0.53 procedure per 1,000 black enrollees). This pattern held true for all age and sex groups. ALOS was longer for black persons (14.57 days) than for white persons (12.78 days).

The number of persons experiencing one adverse event or more during the index stay was higher for black persons than for white persons in all age and sex groups. The number of persons experiencing adverse events in the index stay was 250 black persons per 1,000 procedures versus 217 white persons per 1,000. Death rates within a year of surgery were higher for black persons than for white persons, with the exception of women aged 85 years or over. For all age groups combined, the rate of persons who experienced one readmission or more for any cause within 90 days of the procedure was similar for black persons (129 readmissions per 1,000 discharged alive) and white persons (121 per 1,000). Rates of readmissions for adverse events were also similar for white and black persons.

Variations by geographic area

Tables 3 and 4 contain data on adverse events following total hip replacement by geographic area. Data by metropolitan and rural areas within each State are shown in Table 3, and data by metropolitan statistical area (MSA) are shown in Table 4. Figures 1 and 2 were derived from the data in these tables.

Tables 3 and 4 contain data for the same measures that are shown by age, sex, and race in Table 2. Data for areas in which the rate was significantly different from the national average are annotated with a "+" or "-" if the local rate was different at the $p = 0.05$ level and with a "++" or "--" if the local rate was different at the $p = 0.01$ level. Details on the statistical tests are contained in the appendix.

In Figure 1, rates of readmissions for adverse events are shown by State. The highest readmission rates tended to be in the South and West, although regional patterns were not strong. The highest rate was 165 readmissions with an event per 1,000 persons discharged alive in New Mexico. The lowest rate was in Hawaii (0 readmissions per 1,000). The lowest rate that was significantly different from the national average was 23 readmissions per 1,000 in West Virginia.

Readmissions for Event Group 1, noninfectious problems related to the hip, are shown in Figure 2. The highest readmission rates for this event group tended to occur in the Southwestern and Western States. The highest rate, 137 readmissions per 1,000 persons discharged alive, was in New Mexico. No readmissions for this event group occurred in Hawaii. The lowest rate that was significantly different from the U.S. average was 5 per 1,000 in West Virginia.

Urban-rural patterns

The rate of total hip replacement was higher in rural areas than in urban areas (1.42 procedures per 1,000 enrollees versus 1.17 per 1,000). This pattern held true in three of the four census regions; the exception was the South. Nationally, index stays were slightly longer, on average, in urban areas (13.17 days) than in rural areas (12.08 days), with a similar pattern in each of the four census regions.

Nationally, the rate of adverse events during the index stay was higher in urban areas (223 persons with one adverse event or more in the index stay per 1,000 procedures) than in rural areas (208 per 1,000), although this pattern was reversed in the South. In the Nation as a whole, 1-year death rates were similar in urban and rural areas. In the Northeast, the 1-year death rate was higher in

urban areas (27 per 1,000) than in rural areas (21 per 1,000), and in the South, it was higher in rural areas (36 per 1,000) than in urban areas (30 per 1,000).

The number of persons with one readmission or more for any cause within 90 days of surgery was higher in rural areas (127 persons per 1,000 persons discharged alive) than in urban areas (118 per 1,000). This pattern was reversed in the West (122 per 1,000 in urban areas and 121 per 1,000 in rural areas). Nationally, readmissions for adverse events were higher in rural areas (79 readmissions per 1,000 persons discharged alive) than in urban areas (74 per 1,000), and this pattern held true in three of the four census regions. In the West, there were 86 event-related readmissions per 1,000 persons discharged alive in urban areas versus 74 per 1,000 in rural areas.

With respect to the major event groups, national readmission rates were similar for urban and rural areas, with slightly higher rates in rural areas for each event group. In the West, however, the readmission rate for Event Group 1, noninfectious problems related to the hip, was higher in urban areas (61 per 1,000) than in rural areas (49 per 1,000).

Correlations between rates

Pearson correlation coefficients were computed between several pairs of outcome measures, using MSA-level rates and rates for rural areas within States. This was done to determine whether areas with high rates of one measure of adverse outcome were also high on other measures. MSAs with less than five expected events were excluded from the computation of correlations because of small sample size. The number of expected events is the product of the national average rate times the number of procedures in an area.

No significant association was found between the number of persons with one event or more in the index stay per 1,000 procedures and the number of persons with one readmission or more with an event per 1,000 persons discharged alive ($r = -0.01$, $n = 111$). However, a positive association was found between deaths within a year of surgery and the number of persons with one readmission or more with an event per 1,000 discharged alive ($r = 0.36$, $n = 58$).

Correlation coefficients were also computed between ALOS and the rate of events in the index stay and between ALOS and rates of readmissions. This was done to examine the hypothesis that areas with high ALOS might have high rates of events within the index stay because of the longer time for adverse events to appear. Areas with high ALOS

might also have lower rates of readmissions because more problems would be taken care of in the index stay. For total hip replacement, the correlation between ALOS and the rate of adverse events in the index stay was positive and significant at the 0.05 level ($r = 0.23$, $n = 260$). The correlation between ALOS and the rate of

readmissions with an event was negative but not significant at the 0.05 level ($r = -0.14$, $n = 139$); similarly, the correlation between ALOS and the rate of readmissions within 90 days for any reason was negative but nonsignificant ($r = -0.10$, $n = 179$).

Table 1. Total hip replacement: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986 index stays
(Number of procedures: 33,162. Number of live discharges: 32,954. Total hip replacement must include ICD-9-CM principal procedure code 81.5 and principal diagnosis code 715.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmis- sions within(1)		
Total	--	--	--	271.27	75.50
1. Noninfectious problems related to the hip	--	--	--	7.18	47.76
Mechanical complication of internal orthopedic device, implant, and graft--early	996.4	No	90 days	--	25.49
Mechanical complication of internal orthopedic device, implant, and graft--late	996.4	No	91 days- 1 year	--	15.96
Other complications of internal prosthetic device, implant, and graft	996.7	Yes	30 days	3.59	0.76
Dislocation of hip	835	Yes	1 year	2.44	3.61
Postoperative heterotopic calcification	728.13	No	1 year	--	0.15
Fracture of shaft or unspecified part of femur, closed	821.0	Yes	1 year	1.15	1.79
2. Infectious complications related to surgery	--	--	--	90.83	10.56
Other bacterial pneumonia	482	Yes	30 days	0.81	0.09
Bronchopneumonia, organism unspecified	485	Yes	30 days	0.15	0.06
Pneumonia, organism unspecified	486	Yes	30 days	2.65	0.73
Respiratory complications	997.3	Yes	30 days	11.58	0.30
Postoperative infection	998.5	Yes	30 days	10.49	2.67
Acute cystitis	595.0	Yes	30 days	0.54	0.03
Cystitis, unspecified	595.9	Yes	30 days	1.42	0.03
Urinary tract infection, site not specified	599.0	Yes	30 days	59.53	0.61
Acute pyelonephritis	590.1	Yes	30 days	0.09	0.12
Other pyelonephritis or pyonephrosis, not specified as acute or chronic	590.8	Yes	30 days	0.06	0.09
Infection of kidney, unspecified	590.9	Yes	30 days	0.00	0.00
Septicemia	038	Yes	30 days	1.54	0.46
Other cellulitis and abscess, unspecified site	682.9	Yes	30 days	0.03	0.03
Other cellulitis and abscess, leg, except foot	682.6	Yes	30 days	0.51	0.21
Other infection	999.3	Yes	30 days	0.15	0.00
Infection and inflammatory reaction due to internal prosthetic device, implant, and graft	996.6	No	1 year	--	4.61
Disruption of operation wound	998.3	Yes	21 days	1.27	0.52

(1) Measured from date of surgery to date of readmission.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1. Total hip replacement: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986 index stays
(Number of procedures: 33,162. Number of live discharges: 32,954. Total hip replacement must include ICD-9-CM principal procedure code 81.5 and principal diagnosis code 715.)

Event	ICD-9-CM code	Index stay	Included if occurs in:	Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
			Readmis- sions within(1)		
3. General surgical complications	--	--	--	172.55	17.18
Peripheral vascular complications	997.2	Yes	30 days	5.67	2.82
Acute reaction to foreign substance accidentally left during a procedure	998.7	Yes	1 year	0.03	0.00
Acute edema of lung, unspecified	518.4	Yes	30 days	0.45	0.00
Pulmonary insufficiency following trauma and surgery	518.5	Yes	30 days	0.87	0.00
Retention of urine	788.2	Yes	30 days	19.15	0.06
Incontinence of urine	788.3	Yes	30 days	1.57	0.00
Other vascular complications	999.2	Yes	30 days	0.30	0.00
Foreign body accidentally left during a procedure	998.4	Yes	1 year	0.12	0.03
Other specified complications of procedures, not elsewhere classified	998.8	Yes	30 days	20.11	0.21
Unspecified complication of procedure, not elsewhere classified	998.9	Yes	30 days	0.57	0.03
Postoperative shock	998.0	Yes	30 days	0.96	0.00
Accidental puncture or laceration during a procedure	998.2	Yes	30 days	0.51	0.03
Hemorrhage or hematoma complicating a procedure	998.1	Yes	30 days	14.66	1.30
Iron deficiency anemia, unspecified	280.9	Yes	30 days	5.52	0.00
Trigonitis	595.3	Yes	30 days	0.09	0.03
Pulmonary embolism and infarction	415.1	Yes	30 days	10.52	4.13
Phlebitis and thrombophlebitis	451	Yes	30 days	4.76	3.34
Other venous embolism and thrombosis	453	Yes	30 days	3.41	2.58
Acute myocardial infarction	410	Yes	30 days	5.43	0.64
Acute, but ill-defined, cerebrovascular disease	436	Yes	30 days	1.72	0.33
Decubitus ulcer	707.0	Yes	180 days	3.29	0.61
Iron deficiency anemia, secondary to inadequate dietary iron intake	280.1	Yes	30 days	0.06	0.00
Acute posthemorrhagic anemia	285.1	Yes	30 days	56.69	0.03
Congestive heart failure	428.0	Yes	30 days	14.08	0.67
Subarachnoid hemorrhage	430	Yes	30 days	0.00	0.00
Intracerebral hemorrhage	431	Yes	30 days	0.09	0.00
Other and unspecified intracranial hemorrhage	432	Yes	30 days	0.06	0.03
Occlusion of cerebral arteries	434	Yes	30 days	1.84	0.30
4. Other events	--	--	--	--	--
Mononeuritis of lower limb (lesion of sciatic nerve)	355.0	Yes	7 days	0.72	0.00

(1) Measured from date of surgery to date of readmission.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986 index stays

Race, sex, and age	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
All persons(2)	33,162	1.24	12.83	219	29	32,954
65-74 years	19,141	1.18	12.24	194	21	19,059
75-84 years	12,536	1.56	13.51	249	36	12,432
85 years or over	1,485	0.59	14.74	279	67	1,463
Men	12,558	1.18	12.33	203	36	12,446
65-74 years	7,918	1.12	11.82	185	26	7,868
75-84 years	4,244	1.46	13.07	230	50	4,190
85 years or over	396	0.58	14.64	278	76	388
Women	20,604	1.28	13.13	228	24	20,508
65-74 years	11,223	1.23	12.53	200	17	11,191
75-84 years	8,292	1.62	13.73	259	29	8,242
85 years or over	1,089	0.59	14.78	280	63	1,075
White	30,903	1.31	12.78	217	28	30,707
65-74 years	17,740	1.25	12.19	193	21	17,662
75-84 years	11,750	1.65	13.45	247	35	11,654
85 years or over	1,413	0.63	14.71	276	69	1,391
Men	11,786	1.26	12.30	202	36	11,678
65-74 years	7,403	1.19	11.79	184	26	7,355
75-84 years	3,999	1.55	13.02	228	49	3,947
85 years or over	384	0.64	14.65	276	76	376
Women	19,117	1.35	13.09	227	24	19,029
65-74 years	10,337	1.29	12.48	199	17	10,307
75-84 years	7,751	1.70	13.67	257	28	7,707
85 years or over	1,029	0.63	14.74	276	66	1,015
Black	1,065	0.53	14.57	250	35	1,058
65-74 years	649	0.54	13.91	219	25	645
75-84 years	374	0.64	15.38	291	53	371
85 years or over	42	0.21	17.67	357	24	42
Men	341	0.43	14.08	220	44	339
65-74 years	213	0.41	13.31	192	33	211
75-84 years	120	0.56	15.31	258	58	120
85 years or over	8	0.14	16.00	375	125	8
Women	724	0.60	14.81	264	30	719
65-74 years	436	0.63	14.20	232	21	434
75-84 years	254	0.69	15.41	307	51	251
85 years or over	34	0.25	18.06	353	0	34

(1)Includes "other events" category.

(2)Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986 index stays

Race, sex, and age	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious complications related to surgery	General surgical complications
All persons(2)	121	60	75	48	11	17
65-74 years	111	56	69	41	10	17
75-84 years	131	66	84	56	11	18
85 years or over	170	71	90	62	11	16
Men	135	63	81	53	11	17
65-74 years	123	58	72	45	10	17
75-84 years	152	71	92	63	11	18
85 years or over	209	95	142	113	13	15
Women	113	58	72	44	11	17
65-74 years	103	54	66	39	11	17
75-84 years	120	64	80	52	10	18
85 years or over	156	62	71	44	10	17
White	121	61	76	48	11	17
65-74 years	111	57	70	42	11	17
75-84 years	130	66	85	56	11	18
85 years or over	172	70	86	61	9	16
Men	135	64	83	55	11	17
65-74 years	122	59	74	47	10	17
75-84 years	150	71	93	64	12	17
85 years or over	215	96	141	117	13	11
Women	112	59	72	44	11	17
65-74 years	103	55	67	39	11	17
75-84 years	119	63	80	52	10	18
85 years or over	156	60	66	40	8	18
Black	129	60	71	43	9	20
65-74 years	116	50	59	39	9	11
75-84 years	148	70	75	40	3	32
85 years or over	167	119	214	119	48	48
Men	136	50	62	24	9	29
65-74 years	104	33	43	19	14	9
75-84 years	200	75	83	33	0	50
85 years or over	0	125	250	0	0	250
Women	127	64	75	51	8	15
65-74 years	122	58	67	48	7	12
75-84 years	124	68	72	44	4	24
85 years or over	206	118	206	147	59	0

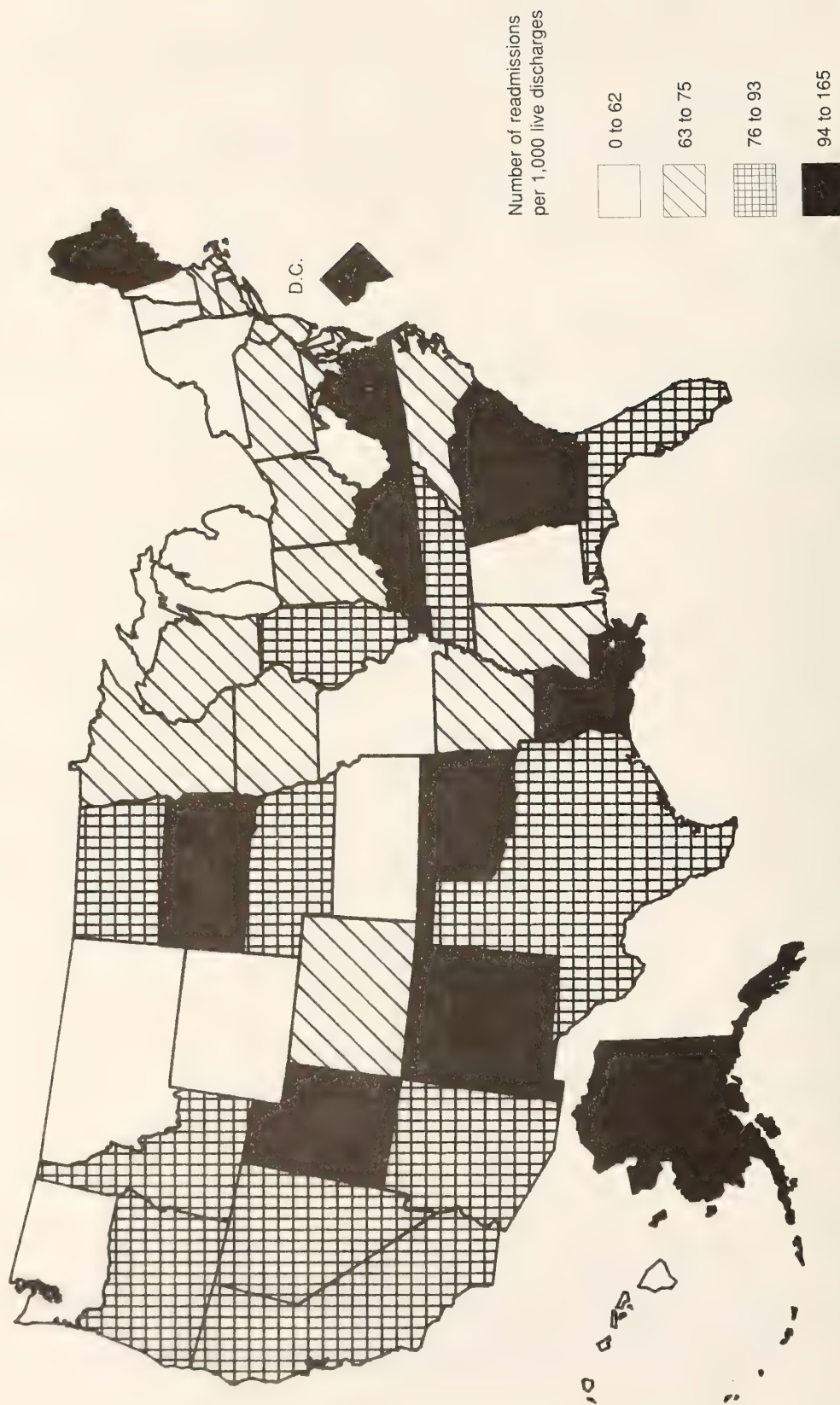
(1)Includes "other events" category.

(2)Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

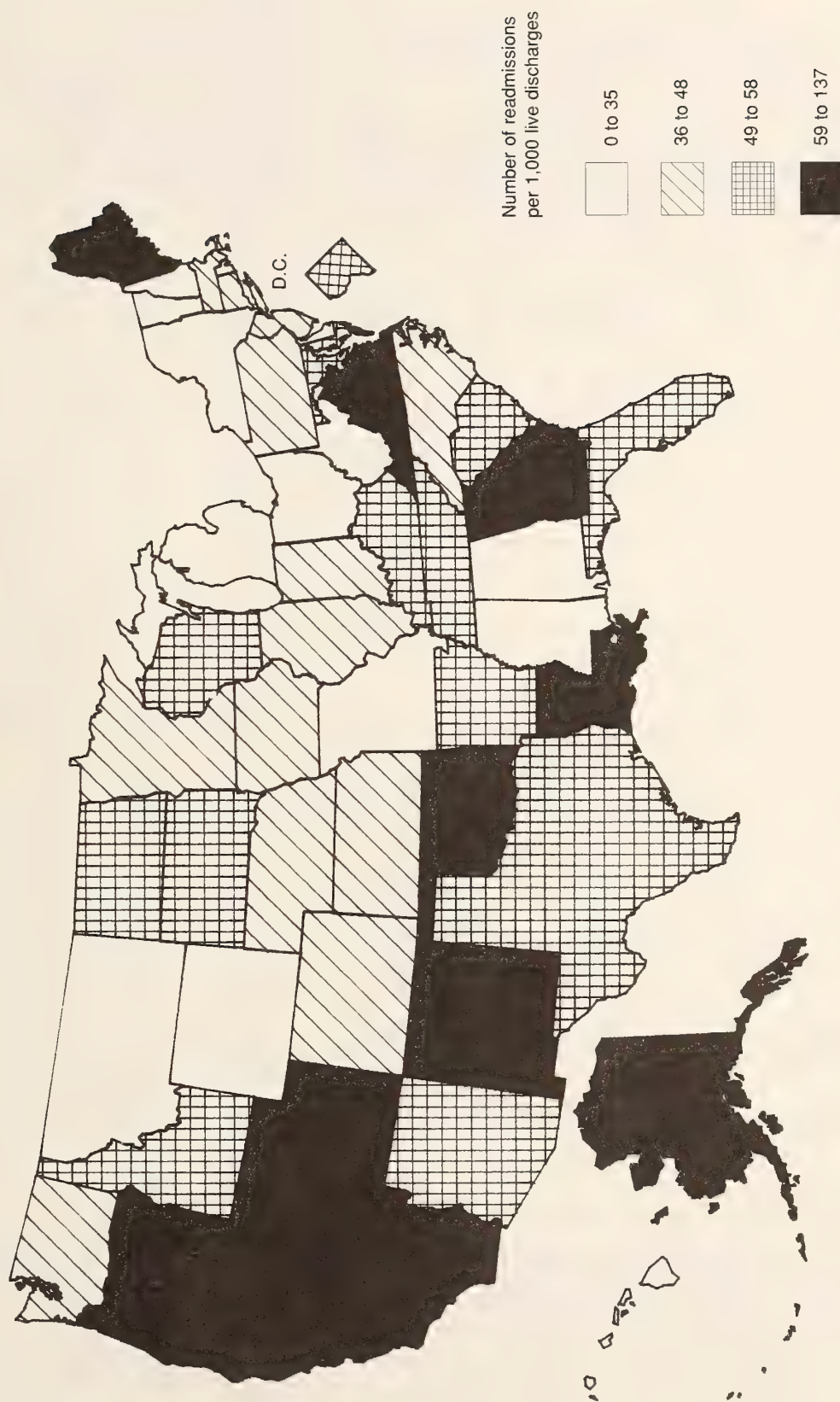
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 1. Total hip replacement: Number of readmissions with an adverse event per 1,000 live discharges for aged Medicare enrollees, by State: 1986 index stays



NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 2. Total hip replacement: Number of readmissions with an adverse event in Event Group 1 (noninfectious problems related to the hip) per 1,000 live discharges for aged Medicare enrollees, by State: 1986 index stays



NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy; Data from the Medicare Statistical System.

Table 3. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
United States	33,162	1.24	12.83	219	29	32,954
Metropolitan	22,716	1.17--	13.17	223	29	22,569
Rural	10,446	1.42++	12.08	208-	28	10,385
Northeast	6,655	1.06--	14.64	255++	26	6,622
Metropolitan	5,659	1.02--	14.92	259++	27	5,628
Rural	996	1.40++	13.03	230	21	994
New England	1,881	1.20	14.11	228	25	1,873
Metropolitan	1,496	1.11--	14.30	219	27	1,489
Rural	385	1.70++	13.33	260	16-	384
Maine	222	1.45+	12.92	252	9	222
Metropolitan	108	1.31	12.86	185	0	108
Rural	114	1.61+	12.98	316+	18	114
New Hampshire	148	1.29	13.66	318++	7	148
Metropolitan	81	1.09	13.89	420++	0	81
Rural	67	1.65+	13.37	194	15	67
Vermont	122	1.94++	13.63	336++	0	122
Metropolitan	11	1.06	19.45	727++	0	11
Rural	111	2.12++	13.05	297	0	111
Massachusetts	777	1.10--	14.77	210	32	772
Metropolitan	696	1.06--	14.89	210	33	692
Rural	81	1.61+	13.73	210	25	80
Rhode Island	141	1.07-	14.60	184	35	141
Metropolitan	141	1.07-	14.60	184	35	141
Rural	0	0.00	0.00	0	0	0
Connecticut	471	1.19	13.69	202	30	468
Metropolitan	459	1.19	13.62	205	28	456
Rural	12	0.99	16.25	83	83	12
Middle Atlantic	4,774	1.01--	14.85	265++	27	4,749
Metropolitan	4,163	0.99--	15.14	273++	27	4,139
Rural	611	1.26	12.84	211	25	610
New York	2,023	0.94--	15.49	277++	32	2,012
Metropolitan	1,751	0.91--	15.82	283++	33	1,741
Rural	272	1.23	13.33	235	29	271
New Jersey	857	0.94--	16.43	354++	32	850
Metropolitan	857	0.94--	16.43	354++	32	850
Rural	0	0.00	0.00	0	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious complications related to surgery	General surgical complications
United States	121	60	75	48	11	17
Metropolitan	118	59	74	47	10	17
Rural	127	63	79	49	12	19
Northeast	110--	53--	66--	40--	11	15
Metropolitan	107--	53-	64--	39--	10	15
Rural	127	52	76	47	16	13
New England	115	55	72	44	11	17
Metropolitan	111	53	65	38	9	17
Rural	130	63	99	68	18	13
Maine	117	59	108	86	18	5
Metropolitan	102	28	46	37	9	0
Rural	132	88	167++	132++	26	9
New Hampshire	135	54	61	20	14	27
Metropolitan	136	62	62	25	12	25
Rural	134	45	60	15	15	30
Vermont	107	49	49	25	16	8
Metropolitan	0	0	0	0	0	0
Rural	117	54	54	27	18	9
Massachusetts	128	60	75	48	10	17
Metropolitan	127	61	72	43	10	19
Rural	138	50	100	88	13	0
Rhode Island	99	50	57	28	7	21
Metropolitan	99	50	57	28	7	21
Rural	0	0	0	0	0	0
Connecticut	92-	49	64	36	9	19
Metropolitan	90-	48	64	37	9	18
Rural	167	83	83	0	0	83
Middle Atlantic	108--	52-	63--	38--	11	14
Metropolitan	106--	53-	64--	39--	11	14
Rural	125	46	62	34	15	13
New York	97--	51	59--	34--	10	14
Metropolitan	96--	52	60-	34--	11	14
Rural	103	44	55	37	4	15
New Jersey	115	55	64	40	11	13
Metropolitan	115	55	64	40	11	13
Rural	0	0	0	0	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Pennsylvania	1,894	1.15--	13.45	213	18--	1,887
Metropolitan	1,555	1.12--	13.67	218	18--	1,548
Rural	339	1.28	12.45	192	21	339
North Central	10,605	1.54++	12.71	212	26	10,539
Metropolitan	5,940	1.35++	13.25	215	27	5,899
Rural	4,665	1.86++	12.02	208	26	4,640
East North Central	6,594	1.39++	13.07	215	29	6,547
Metropolitan	4,490	1.30++	13.45	218	29	4,457
Rural	2,104	1.63++	12.24	210	30	2,090
Ohio	1,646	1.30	13.16	248++	32	1,632
Metropolitan	1,238	1.25	13.42	241	31	1,229
Rural	408	1.48++	12.38	270+	37	403
Indiana	849	1.36++	12.29	160--	38	841
Metropolitan	503	1.26	12.25	169--	40	498
Rural	346	1.55++	12.35	147--	35	343
Illinois	1,607	1.27	14.17	234	29	1,593
Metropolitan	1,155	1.21	14.63	235	30	1,143
Rural	452	1.45++	12.98	230	27	450
Michigan	1,329	1.35++	12.72	205	26	1,325
Metropolitan	936	1.26	12.94	205	29	932
Rural	393	1.65++	12.19	204	20	393
Wisconsin	1,163	1.90++	12.37	196	21	1,156
Metropolitan	658	1.78++	13.08	199	12--	655
Rural	505	2.09++	11.45	192	32	501
West North Central	4,011	1.86++	12.12	206-	22--	3,992
Metropolitan	1,450	1.53++	12.63	206	22	1,442
Rural	2,561	2.11++	11.84	206	23-	2,550
Minnesota	778	1.96++	11.22	195	18-	778
Metropolitan	315	1.68++	11.30	213	16	315
Rural	463	2.21++	11.17	184	19	463
Iowa	915	2.26++	11.44	195	23	910
Metropolitan	259	1.89++	11.80	189	27	257
Rural	656	2.45++	11.31	197	21	653
Missouri	858	1.31	13.22	239	20	849
Metropolitan	472	1.23	13.79	242	23	467
Rural	386	1.42+	12.53	236	16-	382

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious complications related to surgery	General surgical complications
Pennsylvania	116	51	68	42	12	14
Metropolitan	110	52	68	44	10	14
Rural	142	47	68	32	24	12
North Central	117	57	69-	41--	11	17
Metropolitan	116	54-	64--	38--	10	16
Rural	119	61	75	45	13	17
East North Central	118	57	68-	41-	11	16
Metropolitan	116	52-	62--	37--	10	15
Rural	124	66	81	51	11	19
Ohio	119	56	66	34--	11	21
Metropolitan	107	48-	57-	28--	11	19
Rural	156	79	92	52	12	27
Indiana	119	64	75	46	13	15
Metropolitan	124	66	76	48	14	14
Rural	111	61	73	44	12	17
Illinois	119	58	76	48	13	15
Metropolitan	122	59	74	49	10	15
Rural	109	58	80	44	20	16
Michigan	109	49	52--	27--	10	15
Metropolitan	107	46-	49--	23--	11	16
Rural	112	56	59	38	8	13
Wisconsin	128	58	75	54	6	15
Metropolitan	125	47	60	43	6	11
Rural	132	72	96	70	6	20
West North Central	116	57	70	41	12	17
Metropolitan	119	58	70	42	10	18
Rural	114	57	71	40	14	16
Minnesota	120	58	75	42	15	17
Metropolitan	143	76	95	54	13	29
Rural	104	45	60	35	17	9
Iowa	114	57	66	42	11	13
Metropolitan	125	54	58	43	0	16
Rural	110	58	69	41	15	12
Missouri	88--	48	60	35	11	14
Metropolitan	101	54	71	39	13	19
Rural	73--	42	47-	31	8	8

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
North Dakota	218	2.55++	12.44	115--	14	218
Metropolitan	61	2.66++	13.28	98--	0	61
Rural	157	2.51++	12.11	121--	19	157
South Dakota	256	2.66++	13.56	168-	31	253
Metropolitan	56	2.74++	14.21	179	36	55
Rural	200	2.64++	13.38	165-	30	198
Nebraska	439	2.09++	11.84	223	21	438
Metropolitan	109	1.56+	12.47	138-	18	109
Rural	330	2.36++	11.63	252	21	329
Kansas	547	1.78++	12.24	227	33	546
Metropolitan	178	1.44	12.51	208	28	178
Rural	369	2.00++	12.11	236	35	368
South	8,770	0.98--	13.18	201--	32	8,700
Metropolitan	5,702	0.99--	13.35	197--	30	5,656
Rural	3,068	0.95--	12.87	208	36+	3,044
South Atlantic	4,881	1.05--	13.02	193--	30	4,843
Metropolitan	3,548	1.07--	13.17	185--	31	3,519
Rural	1,333	0.98--	12.64	213	28	1,324
Delaware	80	1.14	13.80	138-	13	79
Metropolitan	58	1.31	14.05	86--	17	57
Rural	22	0.85-	13.14	273	0	22
Maryland	412	0.94--	14.69	218	32	406
Metropolitan	373	0.94--	14.61	220	32	367
Rural	39	0.94-	15.46	205	26	39
Dist. of Columbia	61	0.92--	15.48	164	16	61
Metropolitan	61	0.92--	15.48	164	16	61
Rural	0	0.00	0.00	0	0	0
Virginia	620	1.10--	13.88	184-	40	615
Metropolitan	359	1.02--	14.22	156--	42	355
Rural	261	1.24	13.41	222	38	260
West Virginia	219	0.90--	13.59	210	14	218
Metropolitan	84	0.93--	14.56	167	24	83
Rural	135	0.88--	12.99	237	7	135
North Carolina	674	0.98--	12.42	200	40	666
Metropolitan	332	0.96--	12.92	190	39	329
Rural	342	1.00--	11.92	211	41	337

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
North Dakota	115	73	83	50	14	18
Metropolitan	148	66	98	82	0	16
Rural	102	76	76	38	19	19
South Dakota	150	87	107	51	28+	28
Metropolitan	145	109	109	55	18	36
Rural	152	81	106	51	30+	25
Nebraska	128	62	78	43	5	30
Metropolitan	119	46	55	55	0	0
Rural	131	67	85	40	6	40+
Kansas	130	48	60	37	11	13
Metropolitan	101	28--	28--	6--	17	6
Rural	144	57	76	52	8	16
South	133++	67+	84+	53	12	19
Metropolitan	128	64	82	52	12	18
Rural	143++	72+	88+	55	11	22
South Atlantic	123	65	84	55+	12	17
Metropolitan	123	66	87+	59+	12	16
Rural	124	61	76	44	10	22
Delaware	51	25	25	13	13	0
Metropolitan	35	35	35	18	18	0
Rural	91	0	0	0	0	0
Maryland	96	52	71	54	12	5
Metropolitan	98	54	74	54	14	5
Rural	77	26	51	51	0	0
Dist. of Columbia	66	49	98	49	49	0
Metropolitan	66	49	98	49	49	0
Rural	0	0	0	0	0	0
Virginia	154+	81	107+	80+	8	20
Metropolitan	149	85	113	87+	8	17
Rural	162	77	100	69	8	23
West Virginia	87	23--	23--	5--	5	14
Metropolitan	120	24	24	12	12	0
Rural	67-	22	22--	0--	0	22
North Carolina	102	54	66	36	12	18
Metropolitan	103	61	82	49	15	18
Rural	101	47	50	24--	9	18

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
South Carolina	277	0.84--	13.66	217	32	274
Metropolitan	170	0.91--	14.19	259	41	168
Rural	107	0.75--	12.81	150-	19	106
Georgia	506	0.90--	13.48	202	30	500
Metropolitan	308	0.98--	14.02	214	32	304
Rural	198	0.80--	12.63	182	25	196
Florida	2,032	1.19	12.26	184--	26	2,024
Metropolitan	1,803	1.19	12.30	176--	27	1,795
Rural	229	1.20	12.00	245	17	229
East South Central	1,578	0.91--	14.56	211	35	1,567
Metropolitan	818	0.94--	15.07	216	28	814
Rural	760	0.89--	14.01	205	42	753
Kentucky	428	1.01--	14.51	215	35	426
Metropolitan	212	1.16	15.41	226	38	212
Rural	216	0.90--	13.63	204	32	214
Tennessee	506	0.92--	14.30	168--	32	504
Metropolitan	299	0.87--	14.69	167-	17	298
Rural	207	0.99--	13.74	169	53	206
Alabama	393	0.85--	14.50	257	33	390
Metropolitan	245	0.87--	15.03	269	33	243
Rural	148	0.82--	13.62	236	34	147
Mississippi	251	0.87--	15.27	219	44	247
Metropolitan	62	0.93--	15.89	210	32	61
Rural	189	0.84--	15.07	222	48	186
West South Central	2,311	0.89--	12.57	211	35	2,290
Metropolitan	1,336	0.85--	12.77	218	31	1,323
Rural	975	0.96--	12.30	202	41	967
Arkansas	310	0.96--	13.15	235	23	309
Metropolitan	95	0.94--	13.79	316+	11	94
Rural	215	0.97--	12.87	200	28	215
Louisiana	258	0.62--	12.71	190	50	255
Metropolitan	176	0.66--	13.17	205	45	174
Rural	82	0.55--	11.73	159	61	81
Oklahoma	426	1.12-	12.28	181-	42	422
Metropolitan	189	1.05-	12.52	153-	21	188
Rural	237	1.19	12.08	203	59+	234

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
South Carolina	150	88	109	58	22	29
Metropolitan	155	101	113	42	36+	36
Rural	142	66	104	85	0	19
Georgia	136	72	94	68	14	12
Metropolitan	148	69	99	79	13	7
Rural	117	77	87	51	15	20
Florida	128	67	88	58	10	20
Metropolitan	124	65	86	59	8	18
Rural	157	83	105	48	22	35
East South Central	147++	63	80	42	11	26+
Metropolitan	138	52	65	27--	11	27
Rural	158++	76	96	58	12	25
Kentucky	148	82	103	49	16	38++
Metropolitan	156	75	90	28	14	47++
Rural	140	89	117	70	19	28
Tennessee	141	63	89	58	8	24
Metropolitan	131	57	77	37	13	27
Rural	155	73	107	87+	0	19
Alabama	133	44	51	33	5	13
Metropolitan	144	37	45-	21--	8	16
Rural	116	54	61	54	0	7
Mississippi	182+	61	65	12--	20	32
Metropolitan	82	0	0-	0	0	0
Rural	215++	81	86	16-	27	43+
West South Central	145++	74+	87	56	12	19
Metropolitan	137	67	79	48	11	20
Rural	156++	84++	99+	67+	13	19
Arkansas	110	55	68	52	6	10
Metropolitan	85	43	74	64	0	11
Rural	121	60	65	47	9	9
Louisiana	165	94	110	59	16	35
Metropolitan	138	80	103	57	17	29
Rural	222+	123	123	62	12	49
Oklahoma	142	81	102	71	14	17
Metropolitan	80-	37	37-	21	5	11
Rural	192++	115++	154++	111+	21	21

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Texas	1,317	0.90--	12.50	219	33	1,304
Metropolitan	876	0.86--	12.63	224	32	867
Rural	441	0.99--	12.24	211	34	437
West	7,132	1.57++	10.88	217	30	7,093
Metropolitan	5,415	1.49++	11.07	222	30	5,386
Rural	1,717	1.91++	10.28	199-	27	1,707
Mountain	2,247	1.87++	11.09	196--	26	2,238
Metropolitan	1,285	1.78++	11.38	208	29	1,280
Rural	962	2.01++	10.70	180--	22	958
Montana	234	2.41++	11.53	158-	17	233
Metropolitan	44	2.08++	12.84	68-	0	44
Rural	190	2.50++	11.23	179	21	189
Idaho	248	2.26++	10.43	149--	24	247
Metropolitan	37	2.00+	11.97	54-	0	37
Rural	211	2.31++	10.16	166-	28	210
Wyoming	86	2.03++	10.98	233	12	85
Metropolitan	24	1.96	10.29	250	0	24
Rural	62	2.06++	11.24	226	16	61
Colorado	510	1.91++	10.77	214	25	509
Metropolitan	361	1.79++	11.23	249	28	360
Rural	149	2.29++	9.68	128--	20	149
New Mexico	184	1.47+	12.15	120--	43	182
Metropolitan	80	1.55	12.69	50--	38	79
Rural	104	1.41	11.74	173	48	103
Arizona	513	1.47++	12.49	185	29	511
Metropolitan	399	1.55++	12.60	190	35	397
Rural	114	1.26	12.10	167	9	114
Utah	332	2.58++	9.77	304++	21	331
Metropolitan	234	2.51++	9.71	325++	26	233
Rural	98	2.78++	9.89	255	10	98
Nevada	140	1.71++	9.33	136--	29	140
Metropolitan	106	1.65+	9.40	94--	38	106
Rural	34	1.95+	9.12	265	0	34

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Texas	150++	73	83	51	12	19
Metropolitan	155++	74	83	50	13	21
Rural	142	71	82	55	11	16
West	122	64	83+	59++	7--	17
Metropolitan	122	66	86+	61++	8-	17
Rural	121	57	74	49	6-	19
Mountain	128	67	86	58	9	19
Metropolitan	132	72	92	66+	9	16
Rural	122	59	77	47	8	22
Montana	86	43	43-	17--	4	21
Metropolitan	45	45	45	23	23	0
Rural	95	42	42-	16-	0	26
Idaho	113	69	93	57	12	24
Metropolitan	108	108	108	81	27	0
Rural	114	62	90	52	10	29
Wyoming	141	59	59	35	0	24
Metropolitan	125	42	42	0	0	42
Rural	148	66	66	49	0	16
Colorado	124	53	69	41	2	26
Metropolitan	125	61	81	50	3	28
Rural	121	34	40-	20	0	20
New Mexico	148	104	165++	137++	11	16
Metropolitan	114	63	114	114+	0	0
Rural	175	136++	204++	155++	19	29
Arizona	123	72	78	49	16	14
Metropolitan	128	76	83	53	15	15
Rural	105	61	61	35	18	9
Utah	175++	82	115	85+	15	15
Metropolitan	176+	94	133+	107+	13	13
Rural	173	51	71	31	20	20
Nevada	107	50	79	71	0	7
Metropolitan	132	57	85	75	0	9
Rural	29	29	59	59	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Pacific	4,885	1.46++	10.79	226	31	4,855
Metropolitan	4,130	1.41++	10.98	227	31	4,106
Rural	755	1.81++	9.74	224	33	749
Washington	977	2.12++	9.90	241	35	972
Metropolitan	700	2.02++	10.19	233	36	697
Rural	277	2.41++	9.19	260	32	275
Oregon	422	1.39+	10.91	206	36	419
Metropolitan	242	1.33	11.43	211	37	241
Rural	180	1.47+	10.21	200	33	178
California	3,423	1.38++	11.01	223	30	3,402
Metropolitan	3,160	1.36++	11.11	227	29	3,141
Rural	263	1.79++	9.82	183	34	261
Alaska	32	1.96+	10.72	406	31	32
Metropolitan	7	1.24	10.43	429	0	7
Rural	25	2.33+	10.80	400	40	25
Hawaii	31	0.39--	11.71	194	32	30
Metropolitan	21	0.36--	11.71	143	48	20
Rural	10	0.44--	11.70	300	0	10

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Pacific	119	63	82	59++	7--	17
Metropolitan	119	65	85	60++	8-	17
Rural	120	53	71	52	3-	16
Washington	103	50	62	38	7	16
Metropolitan	93-	49	65	42	9	14
Rural	127	55	55	29	4	22
Oregon	112	62	81	60	2	19
Metropolitan	129	83	104	75	4	25
Rural	90	34-	51	39	0	11
California	125	66	88+	64++	7-	17
Metropolitan	125	67	88+	63++	7-	17
Rural	126	57	96	77	4	15
Alaska	219	156	156	125	31	0
Metropolitan	143	143	143	0	143	0
Rural	240	160	160	160	0	0
Hawaii	33	0	0	0	0	0
Metropolitan	50	0	0	0	0	0
Rural	0	0	0	0	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
United States	33,162	1.24	12.83	219	29	32,954
Northeast	6,655	1.06--	14.64	255++	26	6,622
New England	1,881	1.20	14.11	228	25	1,873
Maine	222	1.45+	12.92	252	9	222
Bangor	22	1.37	10.05	91	0	22
Lewiston-Auburn	7	0.52--	12.29	143	0	7
Portland	79	1.49	13.70	215	0	79
New Hampshire	148	1.29	13.66	318++	7	148
Manchester	42	0.95-	13.05	405+	0	42
Portsmouth	39	1.31	14.79	436+	0	39
Vermont	122	1.94++	13.63	336++	0	122
Burlington	11	1.06	19.45	727++	0	11
Massachusetts	777	1.10--	14.77	210	32	772
Boston	458	1.07--	14.27	203	37	455
New Bedford	63	0.96-	14.43	222	48	63
Pittsfield	15	0.74--	11.53	0	67	15
Springfield	77	1.07	15.09	273	13	76
Worcester	83	1.17	19.07	217	12	83
Rhode Island	141	1.07-	14.60	184	35	141
Providence	141	1.07-	14.60	184	35	141
Connecticut	471	1.19	13.69	202	30	468
Bridgeport	90	0.93--	15.69	222	11	90
Hartford	237	1.51++	13.14	181	21	236
New Haven	97	0.94--	12.99	268	62	96
New London	35	1.27	13.29	143	29	34

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	
					General surgical compli- cations	
United States	121	60	75	48	11	17
Northeast	110--	53--	66--	40--	11	15
New England	115	55	72	44	11	17
Maine	117	59	108	86	18	5
Bangor	136	45	136	136	0	0
Lewiston-Auburn	0	0	0	0	0	0
Portland	101	25	25	13	13	0
New Hampshire	135	54	61	20	14	27
Manchester	167	71	71	48	0	24
Portsmouth	103	51	51	0	26	26
Vermont	107	49	49	25	16	8
Burlington	0	0	0	0	0	0
Massachusetts	128	60	75	48	10	17
Boston	130	64	77	46	15	15
New Bedford	127	63	63	16	0	48
Pittsfield	200	133	200	133	0	67
Springfield	53	0-	0--	0	0	0
Worcester	169	84	96	72	0	24
Rhode Island	99	50	57	28	7	21
Providence	99	50	57	28	7	21
Connecticut	92-	49	64	36	9	19
Bridgeport	111	78	89	44	11	33
Hartford	93	47	68	47	13	8
New Haven	73	31	42	21	0	21
New London	59	29	29	0	0	29

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Middle Atlantic	4,774	1.01--	14.85	265++	27	4,749
New York	2,023	0.94--	15.49	277++	32	2,012
Albany	147	1.28	14.69	252	54	146
Binghamton	46	1.29	14.33	130	22	46
Buffalo	131	0.97--	15.05	237	53	130
Elmira	27	1.97	13.11	185	0	27
Glens Falls	17	1.12	14.24	176	0	17
Nassau-Suffolk	276	0.93--	15.49	275+	29	276
New York	719	0.72--	17.31	342++	36	713
Niagara Falls	28	0.91	14.21	179	36	27
Orange County	36	1.18	15.67	306	28	35
Poughkeepsie	40	1.44	12.05	175	0	40
Rochester	150	1.46	14.57	220	20	150
Syracuse	91	1.21	14.02	286	22	91
Utica-Rome	43	0.92-	16.16	233	0	43
New Jersey	857	0.94--	16.43	354++	32	850
Atlantic City	57	1.23	16.00	386++	18	57
Bergen-Passaic	156	0.91--	15.17	397++	32	155
Jersey City	19	0.30--	22.79	263	53	18
Middlesex	85	0.93--	16.86	329+	0	85
Monmouth-Ocean	146	0.94--	18.64	260	27	145
Newark	205	0.97--	17.08	429++	39	203
Trenton	42	1.09	14.86	571++	24	41
Vineland	12	0.73-	13.58	333	0	12
Pennsylvania	1,894	1.15--	13.45	213	18--	1,887
Allentown	107	1.13	13.00	299	9	107
Altoona	17	0.82-	10.76	176	0	17
Beaver County	29	1.05	12.66	138	0	29
Erie	51	1.45	12.00	137	0	51
Harrisburg	97	1.33	13.07	247	21	95
Johnstown	52	1.29	12.85	58--	19	51
Lancaster	75	1.56	16.00	587++	0	75
Philadelphia	563	0.99--	15.34	204	21	563
Pittsburgh	387	1.20	12.56	212	26	384
Reading	78	1.61+	11.65	128-	13	78
Scranton	109	0.89--	13.59	174	18	108
Sharon	26	1.37	14.00	154	38	26
State College	12	1.20	12.75	250	167	12
Williamsport	18	1.07	10.94	111	0	18
York	61	1.26	12.85	279	33	61

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Middle Atlantic	108--	52-	63--	38--	11	14
New York	97--	51	59--	34--	10	14
Albany	144	62	62	21	21	21
Binghamton	174	87	87	65	0	22
Buffalo	62--	54	54	46	8	0
Elmira	74	111	111	74	37	0
Glens Falls	176	118	118	59	0	59
Nassau-Suffolk	69--	36-	54	33	11	11
New York	93--	49	58	36	11	10
Niagara Falls	111	74	74	74	0	0
Orange County	86	57	57	0	0	57
Poughkeepsie	100	25	75	75	0	0
Rochester	100	40	40-	13	20	7
Syracuse	132	110	110	22	11	77++
Utica-Rome	93	0	0	0	0	0
New Jersey	115	55	64	40	11	13
Atlantic City	140	70	70	18	0	53
Bergen-Passaic	103	32	32--	19	13	0
Jersey City	111	111	111	0	56	56
Middlesex	94	35	35	12	0	24
Monmouth-Ocean	48--	41	48	48	0	0
Newark	143	84	113	89+	5	20
Trenton	146	49	49	24	24	0
Vineland	83	83	83	83	0	0
Pennsylvania	116	51	68	42	12	14
Allentown	150	56	56	0-	19	37
Altoona	176	176	235	176	59	0
Beaver County	69	0	0	0	0	0
Erie	196	39	39	20	20	0
Harrisburg	116	84	95	84	11	0
Johnstown	98	59	78	59	0	20
Lancaster	120	27	27	0	0	27
Philadelphia	101	39--	48--	32	11	5-
Pittsburgh	81--	60	86	52	16	18
Reading	205	64	90	51	0	38
Scranton	83	46	65	56	0	9
Sharon	192	77	77	77	0	0
State College	250	0	0	0	0	0
Williamsport	222	0	0	0	0	0
York	148	98	131	82	16	33

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
North Central	10,605	1.54++	12.71	212	26	10,539
East North Central	6,594	1.39++	13.07	215	29	6,547
Ohio	1,646	1.30	13.16	248++	32	1,632
Akron	92	1.22	10.84	174	11	92
Canton	75	1.45	14.92	360+	40	74
Cincinnati	158	0.99--	14.99	241	57	157
Cleveland	334	1.38	13.75	207	36	329
Columbus	130	1.07	12.84	254	23	130
Dayton	107	1.03-	12.73	224	19	107
Hamilton	26	1.00	12.46	231	0	26
Lima	29	1.48	13.10	310	0	29
Lorain-Elyria	44	1.61	14.18	364	23	44
Mansfield	23	1.51	14.09	348	87	22
Steubenville	21	0.96	14.14	238	48	21
Toledo	109	1.54+	13.68	248	28	108
Youngstown	105	1.51	13.91	210	29	105
Indiana	849	1.36++	12.29	160--	38	841
Anderson	20	1.16	11.25	200	0	20
Bloomington	11	1.39	10.91	273	0	11
Elkhart-Goshen	16	1.02	12.31	188	0	16
Evansville	38	1.10	12.76	105	26	38
Fort Wayne	70	1.86++	13.53	186	43	69
Gary-Hammond	81	1.32	12.67	99--	86+	80
Indianapolis	118	1.00--	11.81	254	25	118
Kokomo	18	1.66	10.33	222	111	16
Lafayette	14	1.25	11.79	214	0	14
Muncie	20	1.45	15.10	200	0	20
South Bend	63	1.90++	9.86	0++	32	62
Terre Haute	12	0.61--	13.42	250	83	12
Illinois	1,607	1.27	14.17	234	29	1,593
Aurora-Elgin	47	1.52	14.11	298	64	45
Bloomington	20	1.58	15.15	350	0	20
Champaign	20	1.49	11.10	150	0	20
Chicago	665	1.09--	14.96	269++	39	655
Decatur	16	1.00	14.75	63	0	16
Joliet	39	1.39	13.26	205	0	39
Kankakee	18	1.50	10.83	278	0	18
Lake County	46	1.27	13.67	283	0	46
Peoria	77	1.77++	14.61	65--	13	77
Rockford	41	1.45	12.83	317	24	41
Springfield	40	1.61	17.68	150	0	40

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
North Central	117	57	69-	41--	11	17
East North Central	118	57	68-	41-	11	16
Ohio	119	56	66	34--	11	21
Akron	76	33	43	22	11	11
Canton	149	81	95	54	14	27
Cincinnati	121	25	45	38	0	6
Cleveland	100	46	46-	18--	12	15
Columbus	115	92	92	38	23	31
Dayton	65-	19	28	19	0	9
Hamilton	115	0	0	0	0	0
Lima	69	0	0	0	0	0
Lorain-Elyria	91	68	68	45	0	23
Mansfield	45	91	136	136	0	0
Steubenville	286	48	48	0	0	48
Toledo	93	37	74	37	28	9
Youngstown	143	67	67	10	10	48
Indiana	119	64	75	46	13	15
Anderson	100	50	50	50	0	0
Bloomington	0	0	0	0	0	0
Elkhart-Goshen	63	0	0	0	0	0
Evansville	184	132	132	26	26	79
Fort Wayne	87	29	43	43	0	0
Gary-Hammond	125	50	50	13	13	25
Indianapolis	144	76	85	51	17	17
Kokomo	0	0	0	0	0	0
Lafayette	429+	143	143	143	0	0
Muncie	50	50	50	50	0	0
South Bend	129	97	129	97	32	0
Terre Haute	167	83	167	167	0	0
Illinois	119	58	76	48	13	15
Aurora-Elgin	178	22	22	0	0	22
Bloomington	100	0	0	0	0	0
Champaign	0	0	0	0	0	0
Chicago	119	55	75	49	15	11
Decatur	313	0	0	0	0	0
Joliet	154	77	77	77	0	0
Kankakee	111	56	56	56	0	0
Lake County	87	65	152	130+	0	22
Peoria	104	52	65	52	0	13
Rockford	122	73	73	49	24	0
Springfield	50	50	50	25	0	25

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Michigan	1,329	1.35++	12.72	205	26	1,325
Ann Arbor	27	1.52	13.19	185	0	27
Battle Creek	14	0.83	13.21	286	71	14
Benton Harbor	40	1.85+	10.90	50-	50	40
Detroit	475	1.06--	14.05	221	32	471
Flint	51	1.18	11.55	157	0	51
Grand Rapids	98	1.53	11.18	153	20	98
Jackson	31	1.82	12.68	129	32	31
Kalamazoo	37	1.72	9.00	54-	0	37
Lansing	47	1.45	9.64	447++	43	47
Muskegon	38	2.00+	13.05	158	79	38
Saginaw	78	1.85++	14.15	256	13	78
Wisconsin	1,163	1.90++	12.37	196	21	1,156
Appleton	79	2.29++	13.65	291	0	79
Eau Claire	39	2.30++	12.74	179	0	39
Green Bay	39	2.03+	12.54	51-	0	39
Janesville	35	2.12+	12.29	86	0	35
Kenosha	25	1.75	13.72	280	0	25
LaCrosse	15	1.26	13.67	133	0	15
Madison	71	2.31++	10.11	296	14	71
Milwaukee	257	1.54++	14.01	195	19	255
Racine	28	1.37	13.61	143	0	28
Sheboygan	23	1.59	13.96	174	43	22
Wausau	26	2.01	12.42	115	38	26
West North Central	4,011	1.86++	12.12	206-	22--	3,992
Minnesota	778	1.96++	11.22	195	18-	778
Duluth	46	1.53	12.76	283	0	46
Minneapolis	228	1.61++	10.73	197	22	228
Rochester	21	2.24+	14.33	95	0	21
St. Cloud	30	2.45++	10.17	333	0	30
Iowa	915	2.26++	11.44	195	23	910
Cedar Rapids	34	1.76	11.21	235	0	34
Davenport	77	1.72+	11.92	91--	39	77
Des Moines	60	1.50	14.33	167	33	60
Dubuque	25	2.18+	12.72	160	40	25
Iowa City	13	2.08	13.31	77	0	13
Sioux City	35	2.19+	13.69	257	57	35
Waterloo	45	2.31++	7.93	267	44	43

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious complications related to surgery	General surgical complications
Michigan	109	49	52--	27--	10	15
Ann Arbor	148	148	148	74	37	37
Battle Creek	143	0	0	0	0	0
Benton Harbor	100	50	50	25	0	25
Detroit	119	53	55	25--	17	13
Flint	78	59	59	39	0	20
Grand Rapids	61-	10-	10-	0-	0	10
Jackson	129	65	97	65	0	32
Kalamazoo	108	0	0	0	0	0
Lansing	149	43	43	0	21	21
Muskegon	105	79	105	53	0	53
Saginaw	64	13	13-	0-	0	13
Wisconsin	128	58	75	54	6	15
Appleton	89	13	13-	13	0	0
Eau Claire	77	0	0	0	0	0
Green Bay	154	77	77	51	0	26
Janesville	200	86	171	114	57	0
Kenosha	80	0	0	0	0	0
LaCrosse	267	200	200	67	0	133
Madison	141	85	99	70	0	28
Milwaukee	118	43	51	35	8	8
Racine	143	71	143	143	0	0
Sheboygan	91	91	91	91	0	0
Wausau	231	0	0	0	0	0
West North Central	116	57	70	41	12	17
Minnesota	120	58	75	42	15	17
Duluth	65	22	22	0	0	22
Minneapolis	136	79	96	57	13	26
Rochester	143	95	95	48	0	48
St. Cloud	167	67	67	0	33	33
Iowa	114	57	66	42	11	13
Cedar Rapids	147	147	176	147	0	29
Davenport	117	52	52	26	0	26
Des Moines	200	50	50	50	0	0
Dubuque	80	0	0	0	0	0
Iowa City	154	77	77	77	0	0
Sioux City	114	86	86	29	0	57
Waterloo	70	23	23	23	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Missouri	858	1.31	13.22	239	20	849
Columbia	9	1.05	12.11	222	0	9
Joplin	31	1.61	13.06	226	0	31
Kansas City	184	1.19	14.11	277	27	184
St. Joseph	25	1.83	14.08	320	80	24
St. Louis	332	1.17	13.83	196	18	329
Springfield	40	1.45	14.85	300	50	39
North Dakota	218	2.55++	12.44	115--	14	218
Bismarck	16	1.96	15.00	125	0	16
Fargo	46	3.25++	12.87	87--	0	46
Grand Forks	10	1.76	12.00	200	0	10
South Dakota	256	2.66++	13.56	168-	31	253
Rapid City	22	3.08++	14.45	273	45	21
Sioux Falls	34	2.56++	14.06	118	29	34
Nebraska	439	2.09++	11.84	223	21	438
Lincoln	49	2.33++	12.14	102--	0	49
Omaha	71	1.23	12.24	141	14	71
Kansas	547	1.78++	12.24	227	33	546
Lawrence	10	2.01	14.10	100	100	10
Topeka	28	1.48	12.61	143	0	28
Wichita	76	1.66+	11.58	224	26	76
South	8,770	0.98--	13.18	201--	32	8,700
South Atlantic	4,881	1.05--	13.02	193--	30	4,843
Delaware	80	1.14	13.80	138-	13	79
Wilmington	71	1.22	14.04	99--	28	69
Maryland	412	0.94--	14.69	218	32	406
Baltimore	233	0.95--	14.60	219	30	230
Cumberland	15	0.88	15.20	267	0	15
Hagerstown	12	0.83	12.42	417	0	12
Dist. of Columbia	61	0.92--	15.48	164	16	61
Washington	252	0.97--	14.74	175	28	249
Virginia	620	1.10--	13.88	184-	40	615
Charlottesville	11	0.92	12.09	636+	91	11
Danville	10	0.64--	15.80	200	100	10
Lynchburg	11	0.61--	11.55	0	91	11
Norfolk	105	1.02-	15.50	152	38	103
Richmond	97	1.13	13.63	72--	52	96
Roanoke	31	1.01	13.77	323	0	31

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Missouri	88--	48	60	35	11	14
Columbia	333	111	111	111	0	0
Joplin	65	32	32	0	32	0
Kansas City	92	33-	49	22	16	11
St. Joseph	125	0	0	0	0	0
St. Louis	119	85	100	55	12	33
Springfield	77	51	51	26	0	26
North Dakota	115	73	83	50	14	18
Bismarck	125	63	63	63	0	0
Fargo	196	87	174	152+	0	22
Grand Forks	200	0	0	0	0	0
South Dakota	150	87	107	51	28+	28
Rapid City	95	95	95	48	0	48
Sioux Falls	176	118	118	59	29	29
Nebraska	128	62	78	43	5	30
Lincoln	82	20	20	20	0	0
Omaha	155	56	70	70	0	0
Kansas	130	48	60	37	11	13
Lawrence	0	0	0	0	0	0
Topeka	71	0	0	0	0	0
Wichita	118	39	39	0	26	13
South	133++	67+	84+	53	12	19
South Atlantic	123	65	84	55+	12	17
Delaware	51	25	25	13	13	0
Wilmington	58	43	43	14	29	0
Maryland	96	52	71	54	12	5
Baltimore	100	61	87	70	13	4
Cumberland	0	0	0	0	0	0
Hagerstown	167	167	167	0	167+	0
Dist. of Columbia	66	49	98	49	49	0
Washington	108	60	84	60	16	8
Virginia	154+	81	107+	80+	8	20
Charlottesville	273	91	91	0	0	91
Danville	0	0	0	0	0	0
Lynchburg	182	91	91	0	0	91
Norfolk	165	107	146+	126++	10	10
Richmond	135	83	104	73	10	21
Roanoke	129	32	97	97	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
West Virginia	219	0.90--	13.59	210	14	218
Charleston	27	0.79--	16.48	222	37	26
Huntington	36	0.88-	12.64	139	83	36
Parkersburg	26	1.31	11.85	231	0	26
Wheeling	17	0.77-	15.29	353	0	17
North Carolina	674	0.98--	12.42	200	40	666
Asheville	41	1.68	14.85	220	98	39
Burlington	8	0.55--	12.38	375	0	8
Charlotte	107	0.98--	11.57	103--	28	107
Fayetteville	7	0.52--	10.14	143	0	7
Greensboro	95	0.96--	12.91	158	42	95
Hickory	22	0.94	15.91	409	0	22
Jacksonville	6	1.17	12.17	500	167	6
Raleigh-Durham	47	0.83--	13.28	234	21	46
Wilmington	9	0.71-	13.44	222	0	9
South Carolina	277	0.84--	13.66	217	32	274
Anderson	16	0.96	14.50	125	188+	15
Charleston	23	0.67--	17.61	348	43	22
Columbia	36	1.02	15.92	250	28	36
Florence	3	0.27--	8.67	0	0	3
Greenville	75	1.14	12.91	293	27	75
Georgia	506	0.90--	13.48	202	30	500
Albany	15	1.61	15.53	467	67	15
Athens	15	1.11	12.53	200	0	15
Atlanta	184	0.97--	12.82	201	43	181
Augusta	22	0.67--	14.32	182	45	21
Columbus	24	1.05	13.88	167	42	23
Macon	28	1.08	17.64	214	0	28
Savannah	24	0.95	18.67	333	0	24

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
West Virginia	87	23--	23--	5--	5	14
Charleston	154	38	38	38	0	0
Huntington	139	28	28	0	0	28
Parkersburg	38	38	38	0	38	0
Wheeling	118	0	0	0	0	0
North Carolina	102	54	66	36	12	18
Asheville	128	51	77	51	0	26
Burlington	0	0	0	0	0	0
Charlotte	131	47	56	28	0	28
Fayetteville	143	0	0	0	0	0
Greensboro	74	32	42	42	0	0
Hickory	227	182	273+	91	136++	45
Jacksonville	0	0	0	0	0	0
Raleigh-Durham	65	109	152	87	43	22
Wilmington	111	111	111	111	0	0
South Carolina	150	88	109	58	22	29
Anderson	0	67	67	0	67	0
Charleston	136	136	136	91	0	45
Columbia	167	111	111	56	0	56
Florence	333	333	333	0	0	333
Greenville	187	107	133	40	67++	27
Georgia	136	72	94	68	14	12
Albany	200	67	133	133	0	0
Athens	133	67	133	133	0	0
Atlanta	122	61	94	77	11	6
Augusta	143	95	95	48	0	48
Columbus	261	43	43	43	0	0
Macon	250	71	71	0	71	0
Savannah	125	83	83	83	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Florida	2,032	1.19	12.26	184--	26	2,024
Bradenton	31	0.72--	11.03	161	0	31
Daytona Beach	91	1.45	12.88	121--	33	91
Fort Lauderdale	220	1.21	11.92	118--	32	219
Fort Myers	106	1.73++	10.02	198	57	105
Fort Pierce	55	1.34	12.11	182	36	54
Ft. Walton Beach	6	0.59--	8.67	333	0	6
Gainesville	13	0.78-	12.00	231	0	13
Jacksonville	64	0.79--	13.36	234	0	64
Lakeland	57	1.03	10.86	88--	35	57
Melbourne	55	1.18	11.67	109--	18	55
Miami-Hialeah	140	0.83--	15.16	193	43	139
Naples	49	2.09++	11.14	122-	0	49
Ocala	35	1.12	13.06	343	29	35
Orlando	114	1.26	11.48	167	44	113
Panama City	13	1.10	16.38	154	77	13
Pensacola	25	0.83-	13.84	280	40	25
Sarasota	138	1.77++	13.57	145-	0-	138
Tallahassee	12	0.69--	10.92	417	0	12
Tampa	384	1.19	12.32	167--	23	382
West Palm Beach	195	1.40	11.56	262	21	194
East South Central	1,578	0.91--	14.56	211	35	1,567
Kentucky	428	1.01--	14.51	215	35	426
Lexington	36	1.16	12.78	56-	0	36
Louisville	142	1.32	15.19	218	35	142
Owensboro	13	1.26	20.08	692++	0	13
Tennessee	506	0.92--	14.30	168--	32	504
Chattanooga	30	0.60--	12.03	300	0	30
Clarksville	10	0.80	11.30	100	0	10
Jackson	9	0.89	16.67	222	0	9
Johnson City	56	1.02	12.54	125-	54	55
Knoxville	83	1.17	14.60	108--	36	83
Memphis	45	0.51--	16.82	244	0	45
Nashville	98	1.05	15.61	163	10	97
Alabama	393	0.85--	14.50	257	33	390
Anniston	4	0.30--	15.50	250	0	4
Birmingham	87	0.80--	14.22	287	34	86
Dothan	13	1.02	14.15	308	0	13
Florence	15	0.90	16.67	200	67	15
Gadsden	14	0.98	13.64	286	143	14
Huntsville	17	0.99	16.94	412	59	17
Mobile	53	1.05	16.23	151	0	53
Montgomery	21	0.70--	14.62	381	0	21
Tuscaloosa	13	0.96	14.77	231	0	13

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Florida	128	67	88	58	10	20
Bradenton	161	32	32	0	32	0
Daytona Beach	132	99	110	77	22	11
Fort Lauderdale	119	82	132+	105+	0	27
Fort Myers	95	19	29	19	10	0
Fort Pierce	74	74	111	93	0	19
Ft. Walton Beach	167	0	0	0	0	0
Gainesville	77	0	0	0	0	0
Jacksonville	94	31	47	31	0	16
Lakeland	211	88	88	70	18	0
Melbourne	73	36	36	18	0	18
Miami-Hialeah	122	50	58	29	7	22
Naples	82	41	41	41	0	0
Ocala	229	143	257++	200++	0	57
Orlando	168	53	53	35	0	18
Panama City	231	77	77	77	0	0
Pensacola	120	80	80	40	0	40
Sarasota	80	43	43	36	7	0
Tallahassee	167	83	167	167	0	0
Tampa	128	84	105	63	16	26
West Palm Beach	134	62	98	62	10	26
East South Central	147++	63	80	42	11	26+
Kentucky	148	82	103	49	16	38++
Lexington	250	194+	278++	83	56	139++
Louisville	134	63	63	14	14	35
Owensboro	231	77	77	77	0	0
Tennessee	141	63	89	58	8	24
Chattanooga	133	100	133	133	0	0
Clarksville	0	0	0	0	0	0
Jackson	111	0	0	0	0	0
Johnson City	182	36	36	18	0	18
Knoxville	84	60	96	48	24	24
Memphis	133	67	67	0	22	44
Nashville	144	52	82	41	10	31
Alabama	133	44	51	33	5	13
Anniston	0	0	0	0	0	0
Birmingham	93	23	35	35	0	0
Dothan	154	77	77	0	77	0
Florence	133	0	0	0	0	0
Gadsden	286	71	71	0	0	71
Huntsville	235	176	235	118	59	59
Mobile	132	19	19	0	0	19
Montgomery	238	48	48	0	0	48
Tuscaloosa	77	0	0	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Mississippi	251	0.87--	15.27	219	44	247
Biloxi-Gulfport	14	0.77-	16.64	143	0	14
Jackson	33	0.93	14.70	273	61	32
Pascagoula	11	1.29	18.64	182	0	11
West South Central	2,311	0.89--	12.57	211	35	2,290
Arkansas	310	0.96--	13.15	235	23	309
Fayetteville	15	1.27	11.80	333	0	15
Fort Smith	17	0.79-	13.76	176	0	17
Little Rock	55	1.08	14.84	364+	18	54
Pine Bluff	8	0.73-	11.25	250	0	8
Louisiana	258	0.62--	12.71	190	50	255
Alexandria	15	1.09	11.40	133	67	15
Baton Rouge	34	0.86--	13.03	265	59	34
Houma-Thibodaux	13	0.96	10.31	77	0	13
Lafayette	9	0.62--	11.00	0	0	9
Lake Charles	14	0.85	10.57	143	0	14
Monroe	4	0.27--	9.00	250	0	4
New Orleans	61	0.51--	14.82	279	66	60
Shreveport	26	0.71--	14.73	154	38	25
Oklahoma	426	1.12-	12.28	181-	42	422
Enid	17	2.07	12.88	176	0	17
Lawton	9	1.09	14.44	111	0	9
Oklahoma City	89	1.00-	12.43	169	34	88
Tulsa	73	1.03	12.14	123-	14	73

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Mississippi	182+	61	65	12--	20	32
Biloxi-Gulfport	71	0	0	0	0	0
Jackson	63	0	0	0	0	0
Pascagoula	182	0	0	0	0	0
West South Central	145++	74+	87	56	12	19
Arkansas	110	55	68	52	6	10
Fayetteville	67	0	0	0	0	0
Fort Smith	118	59	176	176	0	0
Little Rock	56	37	37	37	0	0
Pine Bluff	250	125	250	125	0	125
Louisiana	165	94	110	59	16	35
Alexandria	133	67	67	0	0	67
Baton Rouge	147	118	235++	118	59	59
Houma-Thibodaux	154	0	0	0	0	0
Lafayette	111	0	0	0	0	0
Lake Charles	143	143	143	143	0	0
Monroe	0	0	0	0	0	0
New Orleans	183	117	117	67	17	33
Shreveport	40	0	0	0	0	0
Oklahoma	142	81	102	71	14	17
Enid	0	0	0	0	0	0
Lawton	222	111	111	0	0	111
Oklahoma City	80	23	23	11	0	11
Tulsa	82	55	55	41	14	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Texas	1,317	0.90--	12.50	219	33	1,304
Abilene	6	0.46--	17.33	333	0	6
Amarillo	24	1.26	12.38	83	0	24
Austin	43	0.90-	12.28	233	23	43
Beaumont	27	0.64--	12.26	148	37	27
Brazoria	15	1.20	12.73	267	0	15
Brownsville	12	0.59--	12.92	83	0	12
Bryan	8	1.15	12.88	250	125	8
Corpus Christi	22	0.77--	13.95	182	0	22
Dallas	160	0.93--	12.46	219	31	157
El Paso	29	0.78--	12.41	276	34	29
Fort Worth	94	0.96--	12.88	351++	43	91
Galveston	19	0.98	13.00	53	53	18
Houston	146	0.78--	11.89	199	21	145
Killeen-Temple	11	0.64--	8.45	0	0	11
Laredo	3	0.36--	11.33	333	0	3
Longview	19	0.92	10.26	158	105	19
Lubbock	30	1.58	14.07	100	0	30
McAllen	27	0.99	14.74	333	74	27
Midland	12	1.63	10.92	667+	0	12
Odessa	5	0.54--	11.40	400	200	5
San Angelo	11	0.98	11.18	182	0	11
San Antonio	72	0.67--	13.96	236	56	71
Sherman-Denison	16	1.10	12.75	563+	63	16
Texarkana	5	0.33--	13.40	400	0	5
Tyler	24	1.32	12.58	83	42	24
Victoria	5	0.73	11.80	0	0	5
Waco	18	0.76--	11.94	167	0	18
Wichita Falls	14	0.97	15.14	71	0	14
West	7,132	1.57++	10.88	217	30	7,093
Mountain	2,247	1.87++	11.09	196--	26	2,238
Montana	234	2.41++	11.53	158-	17	233
Billings	26	2.15+	11.92	77	0	26
Great Falls	18	1.98	14.17	56	0	18
Idaho	248	2.26++	10.43	149--	24	247
Boise City	37	2.00+	11.97	54-	0	37
Wyoming	86	2.03++	10.98	233	12	85
Casper	8	1.49	11.00	125	0	8
Cheyenne	16	2.32+	9.94	313	0	16

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Texas	150++	73	83	51	12	19
Abilene	0	0	0	0	0	0
Amarillo	167	83	83	42	0	42
Austin	140	70	93	47	23	23
Beaumont	148	111	111	74	37	0
Brazoria	67	67	133	67	67	0
Brownsville	250	83	83	0	0	83
Bryan	500+	375+	375+	125	0	250+
Corpus Christi	273	136	182	136	45	0
Dallas	134	51	57	25	6	25
El Paso	103	34	34	34	0	0
Fort Worth	121	99	99	55	22	22
Galveston	167	111	111	56	0	56
Houston	159	62	62	41	7	14
Killeen-Temple	91	0	0	0	0	0
Laredo	333	0	0	0	0	0
Longview	105	105	211	211+	0	0
Lubbock	100	33	33	33	0	0
McAllen	259	0	0	0	0	0
Midland	83	0	0	0	0	0
Odessa	200	200	200	0	0	200
San Angelo	91	91	182	182	0	0
San Antonio	183	70	85	70	14	0
Sherman-Denison	188	63	63	0	0	63
Texarkana	0	0	0	0	0	0
Tyler	208	167	167	42	42	83
Victoria	200	200	200	200	0	0
Waco	167	167	167	111	56	0
Wichita Falls	214	0	0	0	0	0
West	122	64	83+	59++	7--	17
Mountain	128	67	86	58	9	19
Montana	86	43	43-	17--	4	21
Billings	0	0	0	0	0	0
Great Falls	111	111	111	56	56	0
Idaho	113	69	93	57	12	24
Boise City	108	108	108	81	27	0
Wyoming	141	59	59	35	0	24
Casper	0	0	0	0	0	0
Cheyenne	188	63	63	0	0	63

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Colorado	510	1.91++	10.77	214	25	509
Boulder-Longmont	30	1.98+	11.60	300	33	30
Colorado Springs	44	1.77+	9.57	136	45	44
Denver	213	1.78++	11.96	263	28	212
Fort Collins	30	1.99+	8.63	300	0	30
Greeley	16	1.38	10.13	188	63	16
Pueblo	28	1.82	11.25	250	0	28
New Mexico	184	1.47+	12.15	120--	43	182
Albuquerque	58	1.72+	12.10	34--	17	58
Las Cruces	17	1.81	14.59	59	118	16
Santa Fe	5	0.59-	13.00	200	0	5
Arizona	513	1.47++	12.49	185	29	511
Phoenix	290	1.55++	12.84	207	38	289
Tucson	109	1.55+	11.95	147-	28	108
Utah	332	2.58++	9.77	304++	21	331
Provo-Orem	59	3.67++	9.66	373+	34	59
Salt Lake City	175	2.27++	9.73	309++	23	174
Nevada	140	1.71++	9.33	136--	29	140
Las Vegas	73	1.61+	9.37	82--	41	73
Reno	33	1.72	9.45	121	30	33
Pacific	4,885	1.46++	10.79	226	31	4,855
Washington	977	2.12++	9.90	241	35	972
Bellingham	36	2.64++	9.00	111	56	36
Bremerton	35	2.27++	9.14	171	57	35
Olympia	24	1.68	8.25	42	42	24
Richland	21	1.67	9.67	381	48	21
Seattle	345	2.16++	11.16	235	41	343
Spokane	75	1.82++	9.67	427++	53	74
Tacoma	92	1.83++	8.29	141-	11	92
Vancouver	37	2.17++	11.65	135	0	37
Yakima	35	1.54	9.09	371	0	35
Oregon	422	1.39+	10.91	206	36	419
Eugene	30	1.04	11.67	333	0	30
Medford	25	1.23	11.92	160	120	25
Portland	133	1.34	11.46	218	38	132
Salem	54	1.62	11.02	148	19	54

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Colorado	124	53	69	41	2	26
Boulder-Longmont	100	33	67	67	0	0
Colorado Springs	114	68	91	68	0	23
Denver	127	52	75	52	0	24
Fort Collins	167	133	133	0	33	100+
Greeley	63	0	0	0	0	0
Pueblo	143	107	107	71	0	36
New Mexico	148	104	165++	137++	11	16
Albuquerque	121	69	138	138+	0	0
Las Cruces	125	63	63	63	0	0
Santa Fe	0	0	0	0	0	0
Arizona	123	72	78	49	16	14
Phoenix	135	76	83	55	14	14
Tucson	111	74	83	46	19	19
Utah	175++	82	115	85+	15	15
Provo-Orem	305++	153+	203++	153++	17	34
Salt Lake City	132	75	109	92+	11	6
Nevada	107	50	79	71	0	7
Las Vegas	151	68	110	96	0	14
Reno	91	30	30	30	0	0
Pacific	119	63	82	59++	7--	17
Washington	103	50	62	38	7	16
Bellingham	139	83	111	56	28	28
Bremerton	57	0	0	0	0	0
Olympia	42	0	0	0	0	0
Richland	48	48	143	143	0	0
Seattle	96	47	67	47	3	17
Spokane	135	68	68	14	27	27
Tacoma	76	76	87	54	22	11
Vancouver	54	27	27	27	0	0
Yakima	114	29	29	29	0	0
Oregon	112	62	81	60	2	19
Eugene	67	0	0	0	0	0
Medford	80	40	80	80	0	0
Portland	152	121+	152++	114++	8	30
Salem	130	56	56	19	0	37

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1988 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
California	3,423	1.38++	11.01	223	30	3,402
Anaheim-Santa Ana	238	1.42+	11.02	332++	34	237
Bakersfield	48	1.07	11.98	21--	21	48
Chico	33	1.22	9.88	121	0	33
Fresno	68	1.16	9.35	485++	44	68
Los Angeles	849	1.25	11.71	246	32	842
Merced	12	0.89	10.33	0	83	12
Modesto	40	1.19	11.85	175	0	40
Oakland	267	1.42+	11.06	180	41	264
Oxnard-Ventura	75	1.52	11.57	187	0	75
Redding	18	1.01	8.83	167	0	18
Riverside	269	1.32	11.91	305++	33	267
Sacramento	154	1.28	9.98	136--	19	154
Salinas	54	1.85+	9.04	74--	37	54
San Diego	286	1.39	9.52	185	21	284
San Francisco	238	1.45+	12.37	214	29	235
San Jose	132	1.25	10.50	250	38	132
Santa Barbara	76	2.00++	11.80	184	13	76
Santa Cruz	37	1.50	9.76	54-	54	36
Santa Rosa	100	2.23++	11.15	180	10	100
Stockton	59	1.44	10.54	305	51	59
Vallejo	54	1.51	11.09	278	19	54
Visalia	40	1.39	10.63	200	50	40
Yuba City	13	1.10	10.54	0	0	13
Alaska	32	1.96+	10.72	406	31	32
Anchorage	7	1.24	10.43	429	0	7
Hawaii	31	0.39--	11.71	194	32	30
Honolulu	21	0.36--	11.71	143	48	20

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total hip replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
California	125	66	88+	64++	7-	17
Anaheim-Santa Ana	169	110+	139+	110+	8	21
Bakersfield	104	104	250++	167++	83++	0
Chico	152	61	61	61	0	0
Fresno	103	59	59	15	0	44
Los Angeles	133	68	81	56	7	18
Merced	167	83	83	83	0	0
Modesto	175	150	200+	125	0	75
Oakland	117	80	102	72	0	30
Oxnard-Ventura	107	13	67	67	0	0
Redding	111	0	0	0	0	0
Riverside	120	64	105	90+	11	4
Sacramento	188+	84	104	65	19	19
Salinas	130	37	56	37	19	0
San Diego	81-	46	53	39	7	7
San Francisco	106	47	51	34	4	13
San Jose	136	91	121	83	0	38
Santa Barbara	92	53	92	79	13	0
Santa Cruz	83	0	0	0	0	0
Santa Rosa	60-	40	50	10	0	40
Stockton	102	51	51	34	0	17
Vallejo	167	111	130	111	0	19
Visalia	175	75	100	100	0	0
Yuba City	77	0	0	0	0	0
Alaska	219	156	156	125	31	0
Anchorage	143	143	143	0	143	0
Hawaii	33	0	0	0	0	0
Honolulu	50	0	0	0	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Total knee replacement

Among the Medicare aged, total knee replacement is most frequently performed for osteoarthritis, which causes deterioration of the knee joint. To enable valid comparisons among demographic and geographic groups, data are presented only on those total knee replacements for which the principal diagnosis associated with the hospital stay was ICD-9-CM code 715, osteoarthritis and allied disorders.

In 1986, 43,613 hospitalizations for total knee replacement met the study criteria. These hospitalizations represent a rate of 1.63 procedures per 1,000 Medicare enrollees who did not have end stage renal disease and were not members of health maintenance organizations.

Rates for specific events

The ICD-9-CM codes that were used for selecting cases for this study are provided in Table 1. The diagnoses and procedures (with their ICD-9-CM codes) that were identified with the aid of a panel of orthopedic surgeons as signifying potential adverse outcomes following total knee replacement are also listed. The conditions represented by these diagnoses are referred to as adverse events. The focus of this study is on adverse events occurring both in the index stay, when the surgery was performed, and in subsequent admissions. These adverse events are categorized into four event groups:

1. Noninfectious problems related to the knee.
2. Infectious complications related to surgery.
3. General surgical complications.
4. Other events.

These categories are similar to those used in the section on total hip replacement.

Table 1 also includes information on which codes were counted as adverse events if they occurred in the index stay, which codes were counted if they were the principal diagnosis for a readmission following total knee replacement, and the time interval required in order to include a readmission (for example, within 30 days of the date of surgery).

As noted in the introduction, Medicare claims files for hospital stays contain up to five diagnosis codes and three procedure codes. For this study, all

five diagnosis positions and all three procedure positions were used in counting events that occurred during the index stay. All procedure positions, along with the principal diagnosis position, were considered for readmissions. The index stays occurred in 1986; readmissions were followed up to 1 year after the date of surgery.

During the index stay, 257.42 events occurred per 1,000 procedures. Of these, only 9.22 events per 1,000 procedures involved Event Group 1, noninfectious problems related to the knee. The most common problem in this group was other complications of internal prosthetic device, implant, and graft (3.60 events per 1,000 procedures). Ankylosis of joint of lower leg occurred at a rate of 1.90 events per 1,000 procedures, and dislocation of knee occurred at a rate of 1.81 per 1,000.

In Event Group 2, infectious complications related to surgery, 85.41 events occurred per 1,000 procedures. Almost two-thirds of these (55.40 per 1,000) were urinary tract infections, site not specified. The second most common condition in this group was respiratory complications (10.82 per 1,000).

The most common category of adverse events in the index stay was Event Group 3, general surgical complications, with 162.77 events per 1,000 procedures. Acute posthemorrhagic anemia was the most common event in this group (43.52 per 1,000). Other relatively common events were other specified complications of procedures, not elsewhere classified (21.28 per 1,000); retention of urine (18.09 per 1,000); and congestive heart failure (17.36 per 1,000). These patterns are similar to those displayed by persons undergoing total hip replacement.

There were 65.49 readmissions for adverse events per 1,000 persons discharged alive. The principal diagnoses for these readmissions were partitioned according to the four major event groups described previously. Although relatively rare in the index stay, Event Group 1, noninfectious problems related to the knee, was the most common category of events associated with readmissions, accounting for nearly one-half of all event-related readmissions (31.92 per 1,000 discharged alive). The most common event causing readmissions within this group was mechanical complication of internal orthopedic device, implant, and graft occurring in the period 91 days-1 year (15.04 per 1,000). Other relatively common events

NOTE: For total knee replacement, records of hospital stays with principal ICD-9-CM procedure code 81.41 and principal ICD-9-CM diagnosis code 715 were selected.

causing readmissions in this category were mechanical complication of internal orthopedic device, implant, and graft occurring within 90 days (4.49 per 1,000) and dislocation of knee (4.03 per 1,000).

Readmissions for Event Group 2, infectious complications related to surgery, occurred at a rate of 23.83 per 1,000 persons discharged alive. The most common event within this group was infection and inflammatory reaction due to internal prosthetic device, implant, and graft (13.75 per 1,000). There were 3.66 readmissions for postoperative infection per 1,000 persons discharged alive and 3.41 readmissions per 1,000 for disruption of operation wound.

Readmissions for Event Group 3, general surgical complications, were relatively infrequent, occurring at a rate of 9.74 per 1,000 persons discharged alive. The most common event in this group was pulmonary embolism and infarction (2.42 per 1,000).

Patterns by age, sex, and race

Table 2 contains information on outcomes following total knee replacement for all persons combined and by age, sex, and race. Among persons undergoing total knee replacement, 23 persons per 1,000 procedures, or 2.3 percent, died within a year of surgery. This is the lowest death rate of all procedures included in this volume and probably reflects the elective nature of total knee replacement. Of the 43,613 persons undergoing this procedure, 43,427, or 99.6 percent, were discharged alive. The average length of stay (ALOS) during the index stay was 12.89 days. Of every 1,000 persons undergoing this procedure, 207 experienced one adverse event or more during the index stay; 127 persons per 1,000 persons discharged alive were readmitted within 90 days for any cause; and 57 persons per 1,000 were readmitted at least once with an adverse event.

Total knee replacement was performed at the highest rate on persons aged 75-84 years (2.10 procedures per 1,000 enrollees) and at the lowest rate on those 85 years or over (0.74 per 1,000). ALOS increased slightly with age, from 12.45 days for those aged 65-74 years to 14.28 days for those aged 85 years or over. The number of persons experiencing one adverse event or more during the index stay increased with age, from 182 persons per 1,000 procedures for persons aged 65-74 years to 281 per 1,000 for persons aged 85 years or over.

Deaths within a year of surgery increased substantially with age, from 15 deaths per 1,000 procedures for persons 65-74 years to 54 per 1,000 for those 85 years or over. Readmissions for any cause within 90 days of the procedure increased

from 117 persons per 1,000 live discharges for those aged 65-74 years to 164 per 1,000 for those 85 years or over. Readmissions associated with adverse events were a little higher in the oldest age group; 67 persons were readmitted with an event per 1,000 live discharges among those 85 years or over, compared with 57 readmitted per 1,000 among those 65-84 years.

In 1986, total knee replacement was performed at a 43-percent higher rate for women than for men (1.86 procedures per 1,000 women versus 1.30 per 1,000 men). On average, women remained in the hospital 1 day longer during the index stay than did men (13.21 days versus 12.21 days). Slightly more women than men experienced adverse events during the index stay (216 persons per 1,000 procedures for women versus 189 per 1,000 for men). Death within a year of surgery and readmission within 90 days of surgery for any reason were more common among men for each age group. Readmissions involving an adverse event per 1,000 persons discharged alive were similar for men and women.

Total knee replacement was performed more frequently on white persons (1.70 persons per 1,000 enrollees) than on black persons (0.93 per 1,000). This pattern held true for all age and sex groups. ALOS was longer for black persons (15.18 days) than for white persons (12.79 days). The number of persons experiencing one adverse event or more in the index stay was similar for white and black persons (207 persons per 1,000 procedures and 228 per 1,000, respectively). Overall, the rate at which black persons underwent one readmission or more for any cause within 90 days of the procedure (130 per 1,000) was similar to that of white persons (126 per 1,000). Deaths within a year of surgery were also similar for white and black persons. With regard to the event groups causing readmissions, rates were similar for black and white persons.

Variations by geographic area

Tables 3 and 4 contain data on adverse events following total knee replacement by geographic area. Data by metropolitan and rural areas within each State are shown in Table 3, and data by metropolitan statistical area (MSA) are shown in Table 4. Figures 1 and 2 were derived from the data in these tables.

Tables 3 and 4 contain data for the same measures that are shown by age, sex, and race in Table 2. Data for areas in which the rate was significantly different from the national average are annotated with a "+" or "-" if the local rate was different at the $p = 0.05$ level and with a "++" or "--" if the local rate was different at the $p = 0.01$

level. Details on the statistical tests are contained in the appendix.

Rates of readmissions for adverse events are shown by State in Figure 1. The lowest rates of readmission tended to be in the northern tier of States. The highest rate occurred in Delaware (115 readmissions per 1,000 persons discharged alive); Tennessee had the highest readmission rate (107 per 1,000) that was significantly different from the U.S. rate (65 per 1,000). The lowest rate occurred in Alaska (0 per 1,000), and Minnesota had the lowest rate (43 per 1,000) that was significantly below the U.S. rate.

As shown in Figure 2, the highest readmission rates for Event Group 1, noninfectious problems related to the knee, tended to occur in Eastern States, although the highest rate occurred in Utah (70 readmissions per 1,000 persons discharged alive). The lowest rates tended to occur in the North Central States. No readmissions of this type occurred in Alaska. However, no State had a readmission rate that was statistically significantly below the U.S. rate for this event group.

Urban-rural patterns

Total knee replacement rates were higher in rural areas (1.93 procedures per 1,000 enrollees) than in urban areas (1.52 per 1,000). This pattern held true in three of the four census regions, with the exception being the South. Nationally, index stays were slightly longer, on average, in urban areas (13.25 days) than in rural areas (12.16 days), with a similar pattern in each census region. Nationwide, the rate of adverse events during the index stay was higher in urban areas (210 persons with one adverse event or more per 1,000 procedures) than in rural areas (196 per 1,000), as was the rate of deaths within a year of surgery (24 deaths per 1,000 procedures in urban areas and 21 per 1,000 in rural areas). Only in the Northeast and West Regions did both of these patterns hold true.

The number of persons with one readmission or more within 90 days of surgery was higher in rural areas (133 readmissions per 1,000 persons discharged alive) than in urban areas (124 per 1,000). This pattern held true in all four census regions. Nationally, the number of readmissions for adverse events per 1,000 persons discharged alive was slightly higher in urban than in rural areas (66 per 1,000 versus 64 per 1,000). The rate was higher in urban than rural areas of the Northeast and North Central Regions but higher in rural areas in

the South (74 per 1,000 in rural areas and 69 per 1,000 in urban areas) and similar in rural and urban areas in the West.

The readmission rate for Event Group 1, noninfectious problems related to the knee, was slightly higher in urban than rural areas nationally and in three of the four census regions. In the West, the readmission rate for this event group was 32 per 1,000 persons discharged alive in both urban and rural areas.

Correlations between rates

Pearson correlation coefficients were computed between several pairs of outcome measures, using MSA-level rates and rates for rural areas within States. This was done to determine whether areas with high rates of one measure of adverse outcome were also high on other measures. MSAs with less than five expected events were excluded from the computation of correlations because of small sample size. The number of expected events is the product of the national average rate times the number of procedures in an area.

No significant association was found between the number of persons with one event or more in the index stay per 1,000 procedures and the number of persons with one readmission or more with an event per 1,000 persons discharged alive ($r = -0.06$, $n = 133$). There was also no significant association between deaths within a year of surgery and the number of persons with one readmission or more with an event per 1,000 persons discharged alive ($r = 0.11$, $n = 133$).

Correlation coefficients were also computed between ALOS and rate of events in the index stay and between ALOS and rates of readmissions. This was done to examine the hypothesis that areas with high ALOS might have high rates of events within the index stay because of the longer time for adverse events to appear. Areas with high ALOS might also have lower rates of readmissions because more problems would be taken care of in the index stay. For total knee replacement, the correlation between ALOS and the rate of adverse events in the index stay was positive and significant at the 0.05 level ($r = 0.30$, $n = 293$). The correlation between ALOS and the rate of readmissions with an event was positive but not significant at the 0.05 level ($r = 0.07$, $n = 151$); the correlation between ALOS and the rate of readmissions within 90 days for any reason was negative and nonsignificant ($r = -0.05$, $n = 230$).

Table 1. Total knee replacement: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986 index stays
(Number of procedures: 43,613. Number of live discharges: 43,427. Total knee replacement must include ICD-9-CM principal procedure code 81.41 and principal diagnosis code 715.)

Event	ICD-9-CM code	Index stay	Included if occurs in:	Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
			Readmis- sions within(1)		
Total	--	--	--	257.42	65.49
1. Noninfectious problems related to the knee	--	--	--	9.22	31.92
Mechanical complication of internal orthopedic device, implant, and graft--early	996.4	No	90 days	--	4.49
Mechanical complication of internal orthopedic device, implant, and graft--late	996.4	No	91 days- 1 year	--	15.04
Fracture of other and unspecified parts of femur	821	Yes	1 year	0.57	2.60
Fracture of patella	822	Yes	1 year	0.21	2.79
Fracture of tibia and fibula	823	Yes	1 year	0.60	0.71
Rupture of patellar tendon, nontraumatic	727.66	Yes	90 days	0.07	0.32
Laxity of ligament	728.4	Yes	90 days	0.41	0.02
Injury to popliteal artery	904.41	Yes	21 days	0.05	0.00
Ankylosis of joint of lower leg	718.56	Yes	42 days	1.90	0.97
Dislocation of knee	836	Yes	1 year	1.81	4.03
Other complications of internal prosthetic device, implant, and graft	996.7	Yes	30 days	3.60	0.94
2. Infectious complications related to surgery	--	--	--	85.41	23.83
Other bacterial pneumonia	482	Yes	30 days	0.60	0.09
Bronchopneumonia, organism unspecified	485	Yes	30 days	0.16	0.09
Pneumonia, organism unspecified	486	Yes	30 days	2.73	0.51
Respiratory complications	997.3	Yes	30 days	10.82	0.25
Postoperative infection	998.5	Yes	30 days	7.57	3.66
Acute cystitis	595.0	Yes	30 days	0.46	0.00
Cystitis, unspecified	595.9	Yes	30 days	1.24	0.00
Urinary tract infection, site not specified	599.0	Yes	30 days	55.40	0.92
Acute pyelonephritis	590.1	Yes	30 days	0.16	0.05
Other pyelonephritis or pyonephrosis, not specified as acute or chronic	590.8	Yes	30 days	0.09	0.09
Infection of kidney, unspecified	590.9	Yes	30 days	0.00	0.00
Septicemia	038	Yes	30 days	1.56	0.35
Other cellulitis and abscess, unspecified site	682.9	Yes	30 days	0.09	0.00
Other cellulitis and abscess, leg, except foot	682.6	Yes	30 days	1.12	0.67
Other infection	999.3	Yes	30 days	0.11	0.00
Infection and inflammatory reaction due to internal prosthetic device, implant, and graft	996.6	No	1 year	--	13.75
Disruption of operation wound	998.3	Yes	42 days	3.30	3.41

(1) Measured from date of surgery to date of readmission.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1. Total knee replacement: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986 index stays
(Number of procedures: 43,613. Number of live discharges: 43,427. Total knee replacement must include ICD-9-CM principal procedure code 81.41 and principal diagnosis code 715.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmis- sions within(1)		
3. General surgical complications	--	--	--	162.77	9.74
Peripheral vascular complications	997.2	Yes	30 days	9.65	0.94
Acute reaction to foreign substance accidentally left during a procedure	998.7	Yes	1 year	0.00	0.00
Acute edema of lung, unspecified	518.4	Yes	30 days	0.50	0.02
Pulmonary insufficiency following trauma and surgery	518.5	Yes	30 days	0.66	0.02
Retention of urine	788.2	Yes	30 days	18.09	0.12
Incontinence of urine	788.3	Yes	30 days	2.16	0.00
Other vascular complications	999.2	Yes	30 days	0.32	0.00
Foreign body accidentally left during a procedure	998.4	Yes	1 year	0.07	0.05
Other specified complications of procedures, not elsewhere classified	998.8	Yes	30 days	21.28	0.51
Unspecified complication of procedure, not elsewhere classified	998.9	Yes	30 days	0.69	0.00
Postoperative shock	998.0	Yes	30 days	0.71	0.00
Accidental puncture or laceration during a procedure	998.2	Yes	30 days	0.37	0.00
Hemorrhage or hematoma complicating a procedure	998.1	Yes	30 days	12.73	0.83
Iron deficiency anemia, unspecified	280.9	Yes	30 days	5.64	0.02
Trigonitis	595.3	Yes	30 days	0.18	0.00
Pulmonary embolism and infarction	415.1	Yes	30 days	9.01	2.42
Phlebitis and thrombophlebitis	451	Yes	30 days	5.32	1.40
Other venous embolism and thrombosis	453	Yes	30 days	4.95	1.04
Acute myocardial infarction	410	Yes	30 days	4.49	0.51
Acute, but ill-defined, cerebrovascular disease	436	Yes	30 days	1.26	0.21
Decubitus ulcer	707.0	Yes	180 days	2.25	0.67
Iron deficiency anemia, secondary to inadequate dietary iron intake	280.1	Yes	30 days	0.05	0.00
Acute posthemorrhagic anemia	285.1	Yes	30 days	43.52	0.05
Congestive heart failure	428.0	Yes	30 days	17.36	0.46
Subarachnoid hemorrhage	430	Yes	30 days	0.00	0.00
Intracerebral hemorrhage	431	Yes	30 days	0.05	0.02
Other and unspecified intracranial hemorrhage	432	Yes	30 days	0.02	0.00
Occlusion of cerebral arteries	434	Yes	30 days	1.44	0.46
4. Other events	--	--	--	--	--
Mononeuritis of lower limb (lesion of sciatic nerve)	355.0	Yes	7 days	0.02	0.00

(1) Measured from date of surgery to date of readmission.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986 index stays

Race, sex, and age	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
All persons (2)	43,613	1.63	12.89	207	23	43,427
65-74 years	24,925	1.54	12.45	182	15	24,857
75-84 years	16,830	2.10	13.40	238	31	16,733
85 years or over	1,858	0.74	14.28	281	54	1,837
Men	13,809	1.30	12.21	189	34	13,719
65-74 years	8,591	1.22	11.81	172	21	8,556
75-84 years	4,761	1.63	12.85	216	53	4,710
85 years or over	457	0.67	13.24	241	83	453
Women	29,804	1.86	13.21	216	18	29,708
65-74 years	16,334	1.79	12.79	187	12	16,301
75-84 years	12,069	2.36	13.61	246	23	12,023
85 years or over	1,401	0.76	14.62	295	44	1,384
White	40,107	1.70	12.79	207	23	39,942
65-74 years	22,662	1.60	12.33	180	15	22,602
75-84 years	15,693	2.20	13.30	236	31	15,607
85 years or over	1,752	0.78	14.21	280	54	1,733
Men	12,923	1.38	12.15	189	34	12,844
65-74 years	7,971	1.28	11.73	172	21	7,942
75-84 years	4,516	1.75	12.78	214	52	4,470
85 years or over	436	0.73	13.14	239	83	432
Women	27,184	1.92	13.10	215	18	27,098
65-74 years	14,691	1.84	12.66	185	12	14,660
75-84 years	11,177	2.45	13.51	245	22	11,137
85 years or over	1,316	0.81	14.56	293	44	1,301
Black	1,844	0.93	15.18	228	23	1,837
65-74 years	1,176	0.97	14.88	208	15	1,173
75-84 years	603	1.03	15.71	254	35	600
85 years or over	65	0.33	15.78	338	46	64
Men	353	0.45	15.01	215	37	350
65-74 years	255	0.49	14.63	204	16	253
75-84 years	85	0.39	15.92	235	94	84
85 years or over	13	0.22	16.62	308	77	13
Women	1,491	1.24	15.22	231	19	1,487
65-74 years	921	1.33	14.94	210	15	920
75-84 years	518	1.41	15.68	257	25	516
85 years or over	52	0.38	15.58	346	38	51

(1) Includes "other events" category.

(2) Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986 index stays

Race, sex, and age	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the knee	Infectious complications related to surgery	General surgical complications
All persons(2)	127	57	65	32	24	10
65-74 years	117	57	65	33	24	9
75-84 years	137	57	65	30	24	11
85 years or over	164	67	75	40	24	11
Men	136	57	65	29	25	11
65-74 years	124	58	67	33	24	10
75-84 years	154	54	61	22	26	13
85 years or over	177	75	84	35	31	18
Women	122	57	66	33	23	9
65-74 years	113	56	64	33	24	8
75-84 years	130	58	67	33	23	11
85 years or over	160	64	72	41	22	9
White	126	57	66	32	24	10
65-74 years	117	57	66	33	24	9
75-84 years	136	57	65	30	24	11
85 years or over	165	65	72	36	24	11
Men	136	57	65	29	24	11
65-74 years	124	57	66	33	24	10
75-84 years	152	53	60	22	25	13
85 years or over	178	74	79	30	30	19
Women	122	58	66	34	24	9
65-74 years	112	57	65	33	25	8
75-84 years	130	59	68	33	24	10
85 years or over	161	61	69	38	22	8
Black	130	56	60	31	17	11
65-74 years	129	57	60	31	20	9
75-84 years	137	50	55	27	12	17
85 years or over	94	94	109	78	31	0
Men	120	71	80	51	11	17
65-74 years	115	79	87	55	16	16
75-84 years	143	48	48	24	0	24
85 years or over	77	77	154	154	0	0
Women	132	52	55	26	19	10
65-74 years	133	51	52	24	21	8
75-84 years	136	50	56	27	14	16
85 years or over	98	98	98	59	39	0

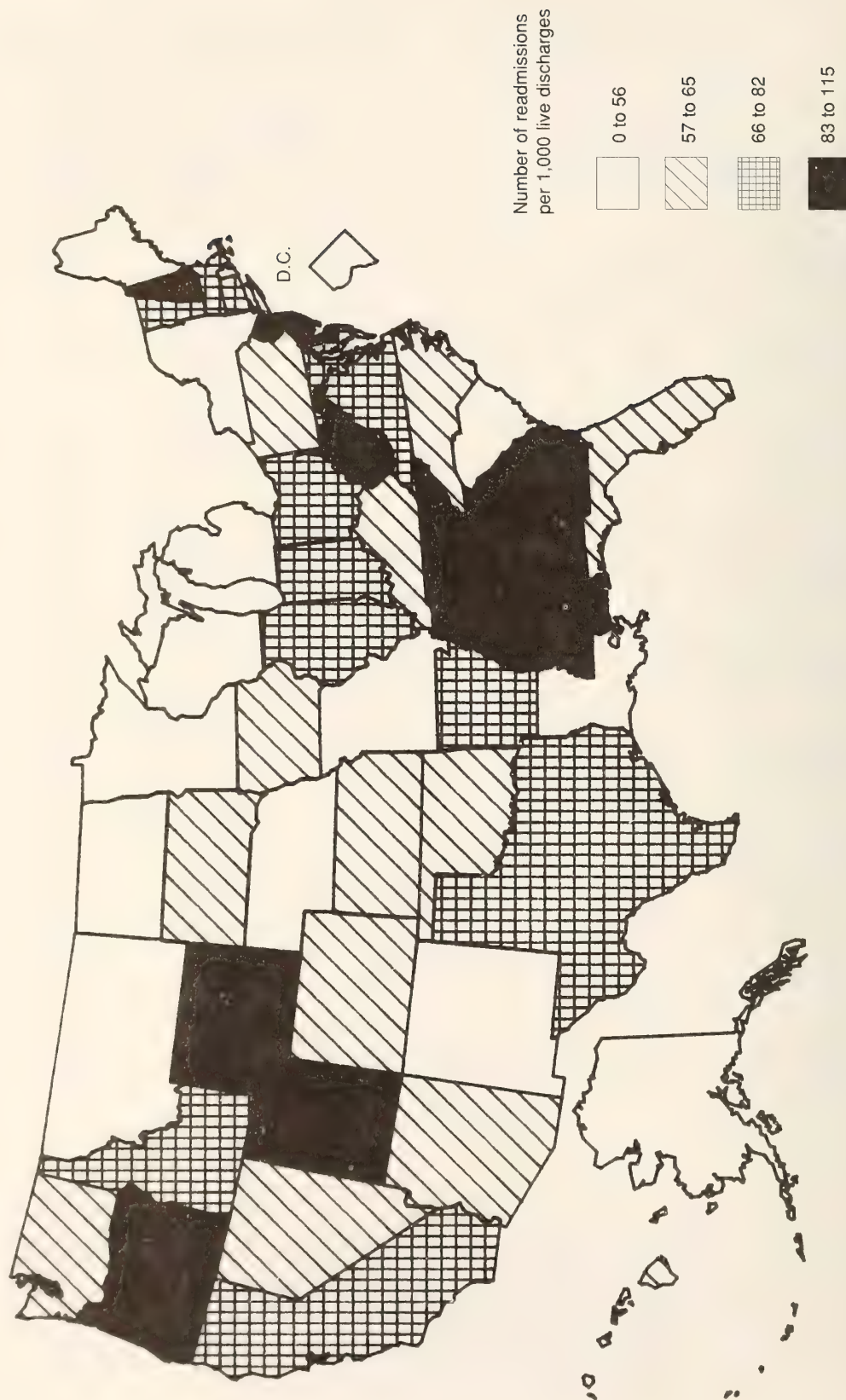
(1)Includes "other events" category.

(2)Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

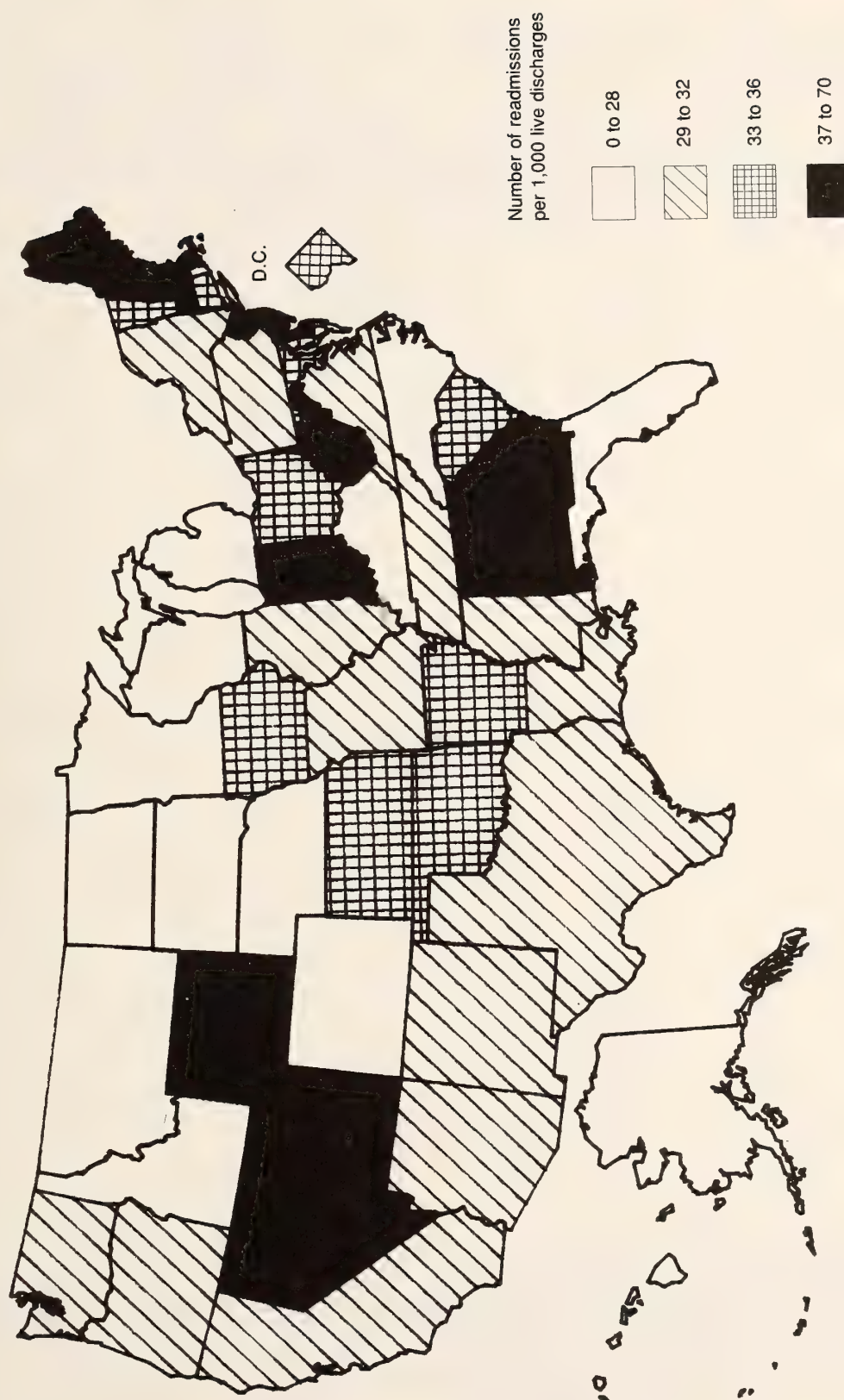
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 1. Total knee replacement: Number of readmissions with an adverse event per 1,000 live discharges for aged Medicare enrollees, by State: 1986 index stays



NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 2. Total knee replacement: Number of readmissions with an adverse event in Event Group 1 (noninfectious problems related to the knee) per 1,000 live discharges for aged Medicare enrollees, by State: 1986 index stays



NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
United States	43,613	1.63	12.89	207	23	43,427
Metropolitan	29,482	1.52--	13.25	212+	24	29,337
Rural	14,131	1.93++	12.16	198--	21-	14,090
Northeast	7,724	1.23--	14.78	253++	23	7,683
Metropolitan	6,545	1.18--	15.04	256++	24	6,508
Rural	1,179	1.66	13.31	235+	15-	1,175
New England	2,058	1.31--	14.41	239++	20	2,048
Metropolitan	1,658	1.23--	14.77	233+	22	1,649
Rural	400	1.77	12.90	265++	13	399
Maine	255	1.66	14.04	294++	12	254
Metropolitan	133	1.62	14.97	256	0	133
Rural	122	1.72	13.02	336++	25	121
New Hampshire	176	1.53	12.96	244	23	174
Metropolitan	83	1.12--	13.81	253	36	81
Rural	93	2.29++	12.20	237	11	93
Vermont	113	1.80	13.18	301+	0	113
Metropolitan	10	0.96-	14.00	400	0	10
Rural	103	1.97	13.10	291	0	103
Massachusetts	849	1.20--	14.83	225	26	845
Metropolitan	789	1.20--	14.91	228	27	785
Rural	60	1.19--	13.82	183	17	60
Rhode Island	179	1.35--	14.78	229	17	177
Metropolitan	179	1.35--	14.78	229	17	177
Rural	0	0.00	0.00	0	0	0
Connecticut	486	1.22--	14.55	222	19	485
Metropolitan	464	1.21--	14.68	228	19	463
Rural	22	1.81	11.82	91	0	22
Middle Atlantic	5,666	1.20--	14.91	258++	24	5,635
Metropolitan	4,887	1.16--	15.13	264++	25	4,859
Rural	779	1.60	13.53	220	17	776
New York	1,816	0.85--	16.04	297++	24	1,808
Metropolitan	1,522	0.79--	16.47	306++	24	1,515
Rural	294	1.33--	13.84	248	24	293
New Jersey	853	0.93--	16.76	376++	32	846
Metropolitan	853	0.93--	16.76	376++	32	846
Rural	0	0.00	0.00	0	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the knee	Infectious compli- cations related to surgery	General surgical compli- cations
United States	127	57	65	32	24	10
Metropolitan	124	58	66	33	24	9
Rural	133+	56	64	30	23	11
Northeast	126	56	64	33	24	7-
Metropolitan	122	57	65	34	24	8-
Rural	144	54	59	27	26	6
New England	127	58	69	38	22	9
Metropolitan	125	58	70	38	22	10
Rural	138	58	63	35	23	5
Maine	122	55	55	43	8	4
Metropolitan	105	60	60	53	0	8
Rural	140	50	50	33	17	0
New Hampshire	167	75	86	52	17	17
Metropolitan	148	62	86	62	12	12
Rural	183	86	86	43	22	22
Vermont	115	53	71	35	35	0
Metropolitan	0	0	0	0	0	0
Rural	126	58	78	39	39	0
Massachusetts	146	56	70	37	24	9
Metropolitan	150	56	71	37	24	10
Rural	83	50	50	33	17	0
Rhode Island	107	56	56	28	11	17
Metropolitan	107	56	56	28	11	17
Rural	0	0	0	0	0	0
Connecticut	95-	58	72	35	31	6
Metropolitan	93-	60	76	37	32	6
Rural	136	0	0	0	0	0
Middle Atlantic	125	56	63	31	24	7--
Metropolitan	122	56	64	33	24	7-
Rural	147	52	57	23	27	6
New York	105--	51	53-	31	17-	5--
Metropolitan	102--	51	53	33	15--	5-
Rural	119	51	55	20	31	3
New Jersey	137	72	87	43	38	7
Metropolitan	137	72	87	43	38	7
Rural	0	0	0	0	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Pennsylvania	2,997	1.82++	13.70	201	22	2,981
Metropolitan	2,512	1.82++	13.77	201	23	2,498
Rural	485	1.83+	13.34	202	12-	483
North Central	14,514	2.10++	12.78	202	20-	14,472
Metropolitan	8,205	1.87++	13.33	202	22	8,176
Rural	6,309	2.52++	12.06	202	18--	6,296
East North Central	8,729	1.84++	13.15	200	21	8,703
Metropolitan	5,961	1.73++	13.60	205	22	5,942
Rural	2,768	2.14++	12.18	188--	20	2,761
Ohio	2,480	1.96++	13.43	238++	23	2,469
Metropolitan	1,956	1.98++	13.63	235++	23	1,948
Rural	524	1.90++	12.68	248+	21	521
Indiana	1,130	1.81++	12.25	142--	21	1,128
Metropolitan	685	1.71	12.62	150--	28	683
Rural	445	1.99++	11.67	130--	11-	445
Illinois	2,048	1.62	14.48	216	23	2,039
Metropolitan	1,428	1.50--	15.06	231+	22	1,421
Rural	620	1.99++	13.15	181	26	618
Michigan	1,566	1.59	12.44	166--	15-	1,565
Metropolitan	1,054	1.42--	12.82	172--	12--	1,054
Rural	512	2.15++	11.65	154--	21	511
Wisconsin	1,505	2.46++	12.31	193	23	1,502
Metropolitan	838	2.27++	12.85	178-	26	836
Rural	667	2.76++	11.64	213	19	666
West North Central	5,785	2.68++	12.22	205	18--	5,769
Metropolitan	2,244	2.37++	12.60	193	23	2,234
Rural	3,541	2.92++	11.97	213	16--	3,535
Minnesota	1,093	2.75++	11.63	232	8--	1,091
Metropolitan	443	2.36++	11.38	226	9--	441
Rural	650	3.10++	11.80	237	8--	650
Iowa	1,355	3.35++	11.15	195	23	1,350
Metropolitan	437	3.19++	11.36	188	34	435
Rural	918	3.44++	11.06	198	17	915
Missouri	1,246	1.90++	13.41	227	26	1,240
Metropolitan	745	1.94++	13.64	211	21	741
Rural	501	1.84+	13.07	251+	32	499

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the knee	Infectious compli- cations related to surgery	General surgical compli- cations
Pennsylvania	134	53	61	29	25	8
Metropolitan	129	54	62	29	25	8
Rural	164+	52	58	25	25	8
North Central	119--	53-	60-	31	20--	9
Metropolitan	115--	56	64	33	22	9
Rural	123	50--	56--	30	17--	9
East North Central	117--	57	65	32	24	10
Metropolitan	114--	58	67	33	25	9
Rural	125	55	62	30	21	11
Ohio	123	62	70	34	23	13
Metropolitan	118	61	69	35	22	12
Rural	144	69	73	27	29	17
Indiana	127	70	82	42	28	12
Metropolitan	117	73	83	41	31	12
Rural	142	65	79	43	25	11
Illinois	126	64	75	32	31	11
Metropolitan	122	60	70	30	30	10
Rural	133	73	86	37	36	13
Michigan	92--	45-	52-	26	22	4--
Metropolitan	95--	51	60	28	28	4--
Rural	86--	33--	37--	22	12-	4
Wisconsin	116	44-	47--	28	12--	7
Metropolitan	110	48	54	31	17	6
Rural	123	39-	39--	24	6--	9
West North Central	120	47--	53--	30	15--	8
Metropolitan	120	49	55-	31	15--	8
Rural	121	46--	51--	30	14--	7
Minnesota	97--	38--	43--	27	10--	5
Metropolitan	98-	48	57	39	14	5
Rural	97-	32--	34--	20-	8--	6
Iowa	117	51	57	36	14--	7
Metropolitan	92-	48	57	34	16	7
Rural	129	52	57	36	13--	8
Missouri	132	48	52	31	13--	9
Metropolitan	130	51	54	34	13-	7
Rural	136	44	50	26	12-	12

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
North Dakota	234	2.74++	12.62	107--	13	233
Metropolitan	52	2.70++	12.11	97--	16	62
Rural	172	2.75++	12.81	110--	12	171
South Dakota	296	3.08++	12.96	125--	17	296
Metropolitan	61	2.99++	13.51	131	33	61
Rural	235	3.10++	12.81	123--	13	235
Nebraska	635	3.03++	11.61	213	16	634
Metropolitan	188	2.68++	12.21	149-	32	187
Rural	447	3.20++	11.36	239	9--	447
Kansas	926	3.01++	12.94	205	17	925
Metropolitan	308	2.49++	13.79	172	23	307
Rural	618	3.36++	12.52	222	15	618
South	13,105	1.46--	13.20	185--	25	13,036
Metropolitan	8,528	1.48--	13.36	183--	25	8,479
Rural	4,577	1.42--	12.89	187--	25	4,557
South Atlantic	6,637	1.42--	13.20	183--	26	6,601
Metropolitan	4,872	1.47--	13.37	181--	26	4,843
Rural	1,765	1.30--	12.74	190	26	1,758
Delaware	97	1.38	15.03	144	52	96
Metropolitan	74	1.67	15.51	135	54	73
Rural	23	0.89--	13.48	174	43	23
Maryland	534	1.22--	14.93	236	32	530
Metropolitan	503	1.27--	14.98	241	32	499
Rural	31	0.75--	14.16	161	32	31
Dist. of Columbia	59	0.89--	17.66	237	0	59
Metropolitan	59	0.89--	17.66	237	0	59
Rural	0	0.00	0.00	0	0	0
Virginia	857	1.51-	14.55	166--	32	849
Metropolitan	589	1.67	14.68	138--	29	583
Rural	268	1.26--	14.26	228	37	266
West Virginia	261	1.07--	14.19	203	46+	260
Metropolitan	95	1.05--	14.53	179	74+	94
Rural	166	1.08--	14.00	217	30	166
North Carolina	835	1.21--	12.66	194	18	833
Metropolitan	398	1.15--	13.47	206	10	398
Rural	437	1.28--	11.93	183	25	435

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the knee	Infectious compli- cations related to surgery	General surgical compli- cations
North Dakota	137	30-	39	21	17	0
Metropolitan	113	16	16	0	16	0
Rural	146	35	47	29	18	0
South Dakota	98	44	57	20	27	10
Metropolitan	131	49	49	33	0	16
Rural	89-	43	60	17	34	9
Nebraska	128	47	54	25	19	9
Metropolitan	155	48	53	11	27	16
Rural	116	47	54	31	16	7
Kansas	134	54	59	35	16	9
Metropolitan	143	55	59	29	16	13
Rural	129	53	60	37	16	6
South	132	62+	71+	32	27+	12
Metropolitan	127	60	69	33	27	10
Rural	140++	66+	74	30	28	16++
South Atlantic	127	62	69	32	27	10
Metropolitan	123	61	68	32	27	8
Rural	136	64	73	31	26	16
Delaware	146	94	115	52	52	10
Metropolitan	151	96	123	55	68	0
Rural	130	87	87	43	0	43
Maryland	125	77	81	36	32	13
Metropolitan	120	78	82	36	32	14
Rural	194	65	65	32	32	0
Dist. of Columbia	68	51	51	34	17	0
Metropolitan	68	51	51	34	17	0
Rural	0	0	0	0	0	0
Virginia	130	58	67	31	29	7
Metropolitan	111	50	53	29	21	3
Rural	169	75	98	34	49+	15
West Virginia	177+	88	96	50	31	15
Metropolitan	202	106	106	53	32	21
Rural	163	78	90	48	30	12
North Carolina	132	61	65	26	24	14
Metropolitan	123	55	55	23	23	10
Rural	140	67	74	30	25	18

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
South Carolina	378	1.15--	13.61	220	11	378
Metropolitan	200	1.07--	14.20	245	5	200
Rural	178	1.25--	12.94	191	17	178
Georgia	681	1.21--	13.06	179	32	676
Metropolitan	372	1.19--	13.53	202	40	368
Rural	309	1.24--	12.49	152--	23	308
Florida	2,935	1.72++	12.39	170--	24	2,920
Metropolitan	2,582	1.70+	12.45	167--	24	2,569
Rural	353	1.85+	11.93	193	23	351
East South Central	1,963	1.14--	14.63	191	24	1,953
Metropolitan	1,054	1.21--	14.89	178-	28	1,046
Rural	909	1.07--	14.33	206	21	907
Kentucky	512	1.21--	14.55	176	21	508
Metropolitan	264	1.44-	14.20	136--	27	262
Rural	248	1.04--	14.94	218	16	246
Tennessee	571	1.04--	14.62	161--	37	568
Metropolitan	358	1.05--	14.86	151--	34	355
Rural	213	1.02--	14.22	178	42	213
Alabama	567	1.22--	14.96	273++	18	564
Metropolitan	345	1.22--	15.50	258+	26	342
Rural	222	1.23--	14.12	297++	5	222
Mississippi	313	1.08--	14.19	121--	19	313
Metropolitan	87	1.31-	14.74	103--	11	87
Rural	226	1.01--	13.97	128--	22	226
West South Central	4,505	1.74++	12.57	184--	25	4,482
Metropolitan	2,602	1.66	12.73	190-	23	2,590
Rural	1,903	1.88++	12.34	175--	26	1,892
Arkansas	416	1.29--	12.79	231	17	414
Metropolitan	110	1.09--	13.69	245	0	110
Rural	306	1.39--	12.47	225	23	304
Louisiana	666	1.60	12.75	156--	26	661
Metropolitan	432	1.61	13.35	176	25	428
Rural	234	1.58	11.63	120--	26	233
Oklahoma	698	1.84++	11.90	156--	27	694
Metropolitan	307	1.71	11.82	150--	20	306
Rural	391	1.97++	11.96	161-	33	388

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the knee	Infectious compli- cations related to surgery	General surgical compli- cations
South Carolina	90-	50	53	34	13	5
Metropolitan	90	50	55	40	15	0
Rural	90	51	51	28	11	11
Georgia	163+	90++	101+	49	38	13
Metropolitan	188++	109++	120++	57	54++	8
Rural	133	68	78	39	19	19
Florida	117	52	60	27	24	9
Metropolitan	118	53	61	28	25	8
Rural	114	46	54	17-	23	14
East South Central	153++	74++	87++	33	34+	20++
Metropolitan	133	59	75	30	29	16
Rural	176++	90++	101++	36	41+	24++
Kentucky	144	59	65	28	16	22+
Metropolitan	156	65	73	31	11	31++
Rural	130	53	57	24	20	12
Tennessee	162+	86+	107++	32	44+	32++
Metropolitan	138	62	85	23	42	20
Rural	202++	127++	146++	47	47	52++
Alabama	145	73	83	41	37	5
Metropolitan	123	64	76	41	29	6
Rural	180+	86	95	41	50+	5
Mississippi	166	77	93	29	42	22
Metropolitan	80	11	34	11	23	0
Rural	199++	102+	115	35	49+	31+
West South Central	130	57	66	31	25	10
Metropolitan	132	58	69	35	25	10
Rural	127	56	62	26	24	11
Arkansas	128	70	82	34	31	17
Metropolitan	109	45	45	27	9	9
Rural	135	79	95	36	39	20
Louisiana	147	51	56	32	17	8
Metropolitan	152	42	47	30	9--	7
Rural	137	69	73	34	30	9
Oklahoma	120	46	59	33	19	7
Metropolitan	118	59	85	49	33	3
Rural	121	36-	39-	21	8-	10

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Texas	2,725	1.86++	12.66	190-	25	2,713
Metropolitan	1,753	1.72+	12.68	197	25	1,746
Rural	972	2.17++	12.62	178-	25	967
West	8,270	1.82++	10.85	211	25	8,236
Metropolitan	6,204	1.70++	11.07	219+	26	6,174
Rural	2,066	2.30++	10.18	187-	23	2,062
Mountain	2,958	2.46++	10.94	197	24	2,944
Metropolitan	1,692	2.35++	11.35	217	23	1,681
Rural	1,266	2.64++	10.39	171--	24	1,263
Montana	201	2.07++	11.48	179	15	201
Metropolitan	47	2.22	12.98	128	43	47
Rural	154	2.02+	11.02	195	6	154
Idaho	349	3.18++	10.62	160-	23	346
Metropolitan	53	2.87++	12.89	113-	19	52
Rural	296	3.24++	10.21	169	24	294
Wyoming	105	2.48++	10.94	152	19	105
Metropolitan	23	1.88	11.26	174	43	23
Rural	82	2.72++	10.85	146	12	82
Colorado	646	2.42++	10.41	217	28	642
Metropolitan	494	2.45++	10.69	231	24	490
Rural	152	2.34++	9.48	171	39	152
New Mexico	257	2.05++	11.54	132--	16	256
Metropolitan	74	1.43	13.15	122-	0	74
Rural	183	2.48++	10.89	137--	22	182
Arizona	849	2.43++	11.93	218	21	844
Metropolitan	605	2.35++	12.46	233	20	600
Rural	244	2.69++	10.60	180	25	244
Utah	387	3.01++	10.06	248	31	387
Metropolitan	266	2.85++	10.02	263+	23	266
Rural	121	3.43++	10.16	215	50	121
Nevada	164	2.00+	9.08	128--	30	163
Metropolitan	130	2.02+	9.14	131--	38	129
Rural	34	1.95	8.85	118	0	34

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the knee	Infectious compli- cations related to surgery	General surgical compli- cations
Texas	128	59	68	30	27	11
Metropolitan	131	62	74	34	29	11
Rural	124	54	58	24	25	9
West	133	57	67	32	25	11
Metropolitan	132	57	67	32	24	11
Rural	139	57	66	32	26	9
Mountain	148++	57	67	37	20	10
Metropolitan	146+	57	66	40	17-	10
Rural	151+	57	67	32	24	11
Montana	149	30-	40	25	15	0
Metropolitan	64	21	43	21	21	0
Rural	175	32	39	26	13	0
Idaho	156	69	72	26	29	17
Metropolitan	58	38	38	19	19	0
Rural	173+	75	78	27	31	20
Wyoming	162	67	86	67	19	0
Metropolitan	43	87	87	87	0	0
Rural	195	61	85	61	24	0
Colorado	151	51	58	25	16	17
Metropolitan	157	59	65	27	20	18
Rural	132	26	33	20	0	13
New Mexico	133	35	51	31	16	4
Metropolitan	108	0-	0-	0	0	0
Rural	143	49	71	44	22	5
Arizona	146	56	63	32	21	9
Metropolitan	153	55	62	37	17	8
Rural	127	57	66	20	33	12
Utah	150	83	106+	70+	28	8
Metropolitan	158	79	105	75++	23	8
Rural	132	91	107	58	41	8
Nevada	141	61	61	55	0-	6
Metropolitan	147	62	62	62	0	0
Rural	118	59	59	29	0	29

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay				Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days				
Pacific	5,312	1.59-	10.80		218	26	5,292
Metropolitan	4,512	1.54--	10.97		220+	27	4,493
Rural	800	1.92++	9.85		211	20	799
Washington	1,026	2.22++	9.98		222	25	1,023
Metropolitan	733	2.11++	10.27		233	25	730
Rural	293	2.55++	9.26		195	27	293
Oregon	407	1.34--	10.59		194	22	406
Metropolitan	220	1.21--	11.34		195	23	219
Rural	187	1.53	9.71		193	21	187
California	3,799	1.53--	10.99		219	26	3,783
Metropolitan	3,504	1.50--	11.06		218	28	3,489
Rural	295	2.00++	10.08		234	10	294
Alaska	27	1.65	15.22		370	37	27
Metropolitan	8	1.42	14.63		375	0	8
Rural	19	1.77	15.47		368	53	19
Hawaii	53	0.66--	12.66		189	0	53
Metropolitan	47	0.81--	12.51		213	0	47
Rural	6	0.27--	13.83		0	0	6

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the knee	Infectious complications related to surgery	General surgical complications
Pacific	125	58	67	29	27	11
Metropolitan	126	58	68	29	27	12
Rural	120	58	65	30	30	5
Washington	107-	51	58	30	21	7
Metropolitan	103-	49	58	30	18	10
Rural	116	55	58	31	27	0
Oregon	135	74	89	30	39	20
Metropolitan	128	78	87	32	32	23
Rural	144	70	91	27	48	16
California	128	58	68	29	28	11
Metropolitan	130	58	69	29	29	11
Rural	112	58	61	34	24	3
Alaska	74	0	0	0	0	0
Metropolitan	0	0	0	0	0	0
Rural	105	0	0	0	0	0
Hawaii	208	57	57	19	19	19
Metropolitan	234	64	64	21	21	21
Rural	0	0	0	0	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
United States	43,613	1.63	12.89	207	23	43,427
Northeast	7,724	1.23--	14.78	253++	23	7,683
New England	2,058	1.31--	14.41	239++	20	2,048
Maine	255	1.66	14.04	294++	12	254
Bangor	25	1.56	12.08	160	0	25
Lewiston-Auburn	27	2.01	16.04	148	0	27
Portland	81	1.53	15.51	321+	0	81
New Hampshire	176	1.53	12.96	244	23	174
Manchester	42	0.95--	14.67	310	0	42
Portsmouth	41	1.38	12.93	195	73	39
Vermont	113	1.80	13.18	301+	0	113
Burlington	10	0.96-	14.00	400	0	10
Massachusetts	849	1.20--	14.83	225	26	845
Boston	485	1.13--	14.66	262++	33	481
New Bedford	79	1.21--	15.01	152	13	79
Pittsfield	20	0.99--	13.65	50	0	20
Springfield	110	1.52	15.56	191	27	110
Worcester	95	1.33-	15.60	200	11	95
Rhode Island	179	1.35--	14.78	229	17	177
Providence	179	1.35--	14.78	229	17	177
Connecticut	486	1.22--	14.55	222	19	485
Bridgeport	97	1.00--	17.33	268	10	97
Hartford	227	1.44-	13.66	216	22	226
New Haven	90	0.87--	14.93	300	33	90
New London	50	1.81	13.74	80--	0	50

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the knee	Infectious complications related to surgery	General surgical complications
United States	127	57	65	32	24	10
Northeast	126	56	64	33	24	7-
New England	127	58	69	38	22	9
Maine	122	55	55	43	8	4
Bangor	120	40	40	40	0	0
Lewiston-Auburn	74	37	37	37	0	0
Portland	111	74	74	62	0	12
New Hampshire	167	75	86	52	17	17
Manchester	143	71	119	119+	0	0
Portsmouth	154	51	51	0	26	26
Vermont	115	53	71	35	35	0
Burlington	0	0	0	0	0	0
Massachusetts	146	56	70	37	24	9
Boston	158	54	75	42	23	10
New Bedford	152	89	101	38	63	0
Pittsfield	200	100	100	50	0	50
Springfield	109	27	27	9	0	18
Worcester	147	63	74	42	32	0
Rhode Island	107	56	56	28	11	17
Providence	107	56	56	28	11	17
Connecticut	95-	58	72	35	31	6
Bridgeport	82	52	82	52	31	0
Hartford	97	66	84	35	44	4
New Haven	67-	67	67	33	22	11
New London	140	40	40	20	0	20

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Middle Atlantic	5,666	1.20--	14.91	258++	24	5,635
New York	1,816	0.85--	16.04	297++	24	1,808
Albany	131	1.14--	15.07	260	38	130
Binghamton	68	1.91	14.19	176	59	68
Buffalo	133	0.99--	13.24	180	30	133
Elmira	21	1.53	15.05	190	0	21
Glens Falls	18	1.18	13.94	222	111	18
Nassau-Suffolk	170	0.57--	16.89	324++	12	168
New York	633	0.63--	18.91	417++	21	630
Niagara Falls	30	0.97--	14.23	200	0	30
Orange County	25	0.82--	13.28	280	80	25
Poughkeepsie	29	1.04--	16.28	172	34	29
Rochester	140	1.37-	15.18	179	14	139
Syracuse	81	1.08--	11.79	173	12	81
Utica-Rome	43	0.92--	15.00	279	23	43
New Jersey	853	0.93--	16.76	376++	32	846
Atlantic City	49	1.06--	15.18	429++	0	49
Bergen-Passaic	171	1.00--	15.33	427++	29	171
Jersey City	37	0.58--	20.62	459++	27	36
Middlesex	85	0.93--	20.07	459++	12	85
Monmouth-Ocean	137	0.89--	16.86	255	51	134
Newark	153	0.72--	17.17	346++	52	151
Trenton	45	1.17--	17.29	533++	0	45
Vineland	17	1.04-	15.29	294	59	17
Pennsylvania	2,997	1.82++	13.70	201	22	2,981
Allentown	176	1.86	13.24	335++	17	175
Altoona	33	1.59	10.61	333	30	32
Beaver County	82	2.98++	12.49	85--	37	82
Erie	85	2.41++	10.82	129-	24	85
Harrisburg	134	1.84	12.97	157	37	131
Johnstown	65	1.61	11.06	92--	0	65
Lancaster	82	1.71	12.89	366++	12	82
Philadelphia	920	1.62	15.52	228	28	915
Pittsburgh	577	1.78+	13.80	191	19	574
Reading	126	2.60++	11.48	167	8	126
Scranton	199	1.62	13.69	176	30	198
Sharon	67	3.52++	13.13	224	30	66
State College	16	1.59	11.56	63	0	16
Williamsport	23	1.36	12.78	0-	43	23
York	74	1.52	13.49	257	14	74

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the knee	Infectious compli- cations related to surgery	General surgical compli- cations
Middle Atlantic	125	56	63	31	24	7--
New York	105--	51	53-	31	17-	5--
Albany	115	38	38	15	15	8
Binghamton	103	44	44	29	0	15
Buffalo	98	38	38	38	0	0
Elmira	95	95	95	48	48	0
Glens Falls	167	111	111	111	0	0
Nassau-Suffolk	119	54	54	12	36	6
New York	111	48	48	33	11--	3
Niagara Falls	67	67	67	33	33	0
Orange County	160	120	120	40	40	40
Poughkeepsie	138	69	69	0	34	34
Rochester	43--	58	65	58	7	0
Syracuse	25--	37	37	37	0	0
Utica-Rome	140	93	116	47	47	23
New Jersey	137	72	87	43	38	7
Atlantic City	122	163+	204++	82	102+	20
Bergen-Passaic	105	41	41	12	18	12
Jersey City	222	83	83	28	56	0
Middlesex	165	82	82	71	12	0
Monmouth-Ocean	119	75	90	45	30	15
Newark	119	79	113+	66	46	0
Trenton	156	67	111	22	89+	0
Vineland	294	176	176	176+	0	0
Pennsylvania	134	53	61	29	25	8
Allentown	109	40	40	17	6	17
Altoona	63	63	63	63	0	0
Beaver County	122	49	49	37	0	12
Erie	176	94	94	35	59	0
Harrisburg	92	38	38	15	15	8
Johnstown	108	0-	0-	0	0	0
Lancaster	122	61	61	24	24	12
Philadelphia	134	51	64	30	25	10
Pittsburgh	131	56	61	26	31	3
Reading	119	40	63	40	24	0
Scranton	172	71	81	40	30	10
Sharon	167	91	91	45	30	15
State College	0	63	63	63	0	0
Williamsport	130	87	87	43	43	0
York	95	41	54	14	41	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
North Central	14,514	2.10++	12.78	202	20-	14,472
East North Central	8,729	1.84++	13.15	200	21	8,703
Ohio	2,480	1.96++	13.43	238++	23	2,469
Akron	159	2.10++	10.76	214	31	159
Canton	130	2.51++	12.74	315++	23	129
Cincinnati	215	1.35--	15.16	209	9	214
Cleveland	441	1.82+	14.95	261+	27	440
Columbus	255	2.10++	12.60	231	27	254
Dayton	158	1.53	14.05	285+	13	158
Hamilton	55	2.11	12.96	164	36	55
Lima	51	2.60++	14.29	275	20	51
Lorain-Elyria	56	2.05	13.75	286	0	56
Mansfield	34	2.23	12.21	324	0	34
Steubenville	26	1.19	14.00	154	38	26
Toledo	183	2.59++	13.58	191	27	181
Youngstown	192	2.77++	13.58	141--	31	190
Indiana	1,130	1.81++	12.25	142--	21	1,128
Anderson	41	2.38+	13.32	195	98+	41
Bloomington	10	1.26	10.90	0	0	10
Elkhart-Goshen	49	3.13++	13.24	163	41	49
Evansville	45	1.31	11.09	111	44	45
Fort Wayne	98	2.61++	14.13	82--	10	98
Gary-Hammond	81	1.32-	12.51	123-	12	81
Indianapolis	152	1.28--	12.93	164	20	152
Kokomo	23	2.12	11.22	43	0	23
Lafayette	16	1.43	10.75	63	63	16
Muncie	35	2.54+	13.29	229	114+	33
South Bend	88	2.65++	10.26	125-	0	88
Terre Haute	25	1.28	12.68	440+	40	25
Illinois	2,048	1.62	14.48	216	23	2,039
Aurora-Elgin	78	2.52++	14.54	128-	13	78
Bloomington	31	2.45	15.97	194	0	31
Champaign	28	2.09	12.43	71	0	28
Chicago	728	1.20--	15.48	251++	30	725
Decatur	53	3.31++	16.96	208	0	53
Joliet	51	1.82	14.14	255	59	49
Kankakee	35	2.91++	12.34	343	0	35
Lake County	58	1.61	15.69	224	17	58
Peoria	66	1.52	16.29	136	0	66
Rockford	60	2.12	12.98	317	17	60
Springfield	43	1.73	15.81	233	47	43

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the knee	Infectious compli- cations related to surgery	General surgical compli- cations
North Central	119--	53-	60-	31	20--	9
East North Central	117--	57	65	32	24	10
Ohio	123	62	70	34	23	13
Akron	107	63	82	25	31	25
Canton	132	70	78	39	23	16
Cincinnati	215++	98+	107	42	37	28+
Cleveland	109	57	75	39	23	14
Columbus	114	67	79	39	35	4
Dayton	127	82	82	51	25	6
Hamilton	91	36	36	0	18	18
Lima	118	20	20	20	0	0
Lorain-Elyria	71	36	36	36	0	0
Mansfield	118	29	29	29	0	0
Steubenville	308+	115	115	77	0	38
Toledo	66--	44	44	39	0-	6
Youngstown	100	37	37	16	11	11
Indiana	127	70	82	42	28	12
Anderson	220	73	73	24	49	0
Bloomington	0	100	100	100	0	0
Elkhart-Goshen	102	0	0	0	0	0
Evansville	111	67	67	22	44	0
Fort Wayne	92	51	51	31	0	20
Gary-Hammond	86	86	99	62	25	12
Indianapolis	125	99	132++	66	66++	0
Kokomo	43	87	87	43	43	0
Lafayette	125	0	0	0	0	0
Muncie	152	30	30	30	0	0
South Bend	136	102	114	57	34	23
Terre Haute	120	80	80	0	40	40
Illinois	126	64	75	32	31	11
Aurora-Elgin	141	64	103	26	77+	0
Bloomington	129	129	194+	129+	65	0
Champaign	143	36	71	71	0	0
Chicago	116	63	73	37	26	10
Decatur	132	94	94	19	19	57+
Joliet	102	61	61	41	20	0
Kankakee	200	86	86	0	86	0
Lake County	138	17	17	17	0	0
Peoria	167	15	15	0	15	0
Rockford	167	83	83	0	83+	0
Springfield	0--	70	70	23	23	23

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Michigan	1,566	1.59	12.44	166--	15-	1,565
Ann Arbor	19	1.07-	12.79	158	0	19
Battle Creek	22	1.31	11.50	136	45	22
Benton Harbor	37	1.71	10.62	81	0	37
Detroit	491	1.09--	13.93	175	16	491
Flint	83	1.93	13.35	193	0	83
Grand Rapids	133	2.08+	11.28	158	8	133
Jackson	39	2.29	12.08	308	26	39
Kalamazoo	45	2.09	9.87	133	22	45
Lansing	43	1.32	11.49	233	0	43
Muskegon	55	2.90++	12.67	200	0	55
Saginaw	87	2.06	12.30	115--	11	87
Wisconsin	1,505	2.46++	12.31	193	23	1,502
Appleton	103	2.99++	12.94	252	10	103
Eau Claire	44	2.60+	13.00	91	23	44
Green Bay	83	4.33++	12.65	48--	24	83
Janesville	50	3.02++	12.60	120	40	50
Kenosha	23	1.61	12.78	130	0	23
LaCrosse	25	2.11	13.00	200	80	25
Madison	88	2.86++	10.22	273	23	88
Milwaukee	299	1.79	13.81	211	27	297
Racine	41	2.00	13.02	73	0	41
Sheboygan	27	1.87	12.15	148	0	27
Wausau	33	2.55+	12.91	91	0	33
West North Central	5,785	2.68++	12.22	205	18--	5,769
Minnesota	1,093	2.75++	11.63	232	8--	1,091
Duluth	52	1.73	11.83	135	19	52
Minneapolis	329	2.32++	11.23	234	21	327
Rochester	31	3.30++	13.94	290	0	31
St. Cloud	32	2.61+	8.75	313	0	32
Iowa	1,355	3.35++	11.15	195	23	1,350
Cedar Rapids	71	3.67++	9.65	324+	28	71
Davenport	105	2.35++	11.91	190	19	104
Des Moines	99	2.47++	12.67	152	61	98
Dubuque	40	3.49++	12.45	75	0	40
Iowa City	29	4.65++	14.83	241	34	29
Sioux City	52	3.26++	12.81	173	38	51
Waterloo	72	3.69++	8.25	125-	42	72

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges		
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the knee	Infectious compli- cations related to surgery	General surgical compli- cations
Michigan	92--	45-	52-	26	22	4--
Ann Arbor	53	0	0	0	0	0
Battle Creek	91	45	45	45	0	0
Benton Harbor	54	27	27	27	0	0
Detroit	75--	47	53	29	24	0-
Flint	157	60	60	24	24	12
Grand Rapids	113	75	90	15	60+	15
Jackson	77	103	103	103	0	0
Kalamazoo	156	22	22	0	0	22
Lansing	186	70	116	23	93+	0
Muskegon	127	36	55	18	36	0
Saginaw	57--	46	57	46	11	0
Wisconsin	116	44-	47--	28	12--	7
Appleton	87	29	29	29	0	0
Eau Claire	205	91	91	0	91+	0
Green Bay	108	0-	0--	0	0	0
Janesville	140	60	60	20	20	20
Kenosha	174	0	0	0	0	0
LaCrosse	0	0	0	0	0	0
Madison	91	34	45	34	0	11
Milwaukee	111	57	67	37	24	7
Racine	122	98	122	122+	0	0
Sheboygan	74	74	74	37	37	0
Wausau	61	61	61	30	0	30
West North Central	120	47--	53--	30	15--	8
Minnesota	97--	38--	43--	27	10--	5
Duluth	58	0	0	0	0	0
Minneapolis	116	61	73	49	21	3
Rochester	65	32	32	0	0	32
St. Cloud	94	31	31	31	0	0
Iowa	117	51	57	36	14--	7
Cedar Rapids	155	56	56	28	14	14
Davenport	115	58	58	19	10	29
Des Moines	92	51	71	41	31	0
Dubuque	75	100	100	100	0	0
Iowa City	69	69	69	34	34	0
Sioux City	59	20	20	20	0	0
Waterloo	56	28	28	14	0	14

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay				Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days				
Missouri	1,246	1.90++	13.41		227	26	1,240
Columbia	18	2.10	11.28		278	0	18
Joplin	32	1.66	13.47		250	0	32
Kansas City	301	1.94++	14.98		219	17	299
St. Joseph	25	1.83	14.40		320	80	25
St. Louis	563	1.99++	13.42		192	18	559
Springfield	54	1.95	15.43		296	19	54
North Dakota	234	2.74++	12.62		107--	13	233
Bismarck	21	2.57	12.71		95	0	21
Fargo	49	3.47++	12.90		82--	20	49
Grand Forks	13	2.29	9.38		77	0	13
South Dakota	296	3.08++	12.96		125--	17	296
Rapid City	14	1.96	11.86		214	0	14
Sioux Falls	47	3.54++	14.00		106	43	47
Nebraska	635	3.03++	11.61		213	16	634
Lincoln	70	3.33++	12.13		129-	14	70
Omaha	145	2.52++	11.97		179	34	144
Kansas	926	3.01++	12.94		205	17	925
Lawrence	4	0.81	14.00		250	250	4
Topeka	48	2.53+	14.23		83	0	48
Wichita	147	3.21++	12.53		170	34	147
South	13,105	1.46--	13.20		185--	25	13,036
South Atlantic	6,637	1.42--	13.20		183--	26	6,601
Delaware	97	1.38	15.03		144	52	96
Wilmington	91	1.57	15.65		132-	55	90
Maryland	534	1.22--	14.93		236	32	530
Baltimore	330	1.35--	14.96		261+	21	328
Cumberland	29	1.70	16.00		138	34	29
Hagerstown	19	1.31	13.32		263	53	19
Dist. of Columbia	59	0.89--	17.66		237	0	59
Washington	296	1.14--	15.35		196	34	293
Virginia	857	1.51-	14.55		166--	32	849
Charlottesville	15	1.25	12.53		400	0	15
Danville	18	1.16	12.39		278	56	17
Lynchburg	21	1.16	10.29		0-	0	21
Norfolk	177	1.71	15.10		107--	34	174
Richmond	192	2.24++	15.38		141--	26	192
Roanoke	47	1.53	14.51		128	21	46

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the knee	Infectious compli- cations related to surgery	General surgical compli- cations
Missouri	132	48	52	31	13--	9
Columbia	56	0	0	0	0	0
Joplin	281+	63	63	0	31	31
Kansas City	134	54	60	27	20	13
St. Joseph	80	0	0	0	0	0
St. Louis	116	48	50	30	13-	7
Springfield	204	37	37	37	0	0
North Dakota	137	30-	39	21	17	0
Bismarck	48	0	0	0	0	0
Fargo	122	20	20	20	0	0
Grand Forks	77	77	77	0	77	0
South Dakota	98	44	57	20	27	10
Rapid City	71	71	71	71	0	0
Sioux Falls	149	43	43	21	0	21
Nebraska	128	47	54	25	19	9
Lincoln	71	43	57	29	29	0
Omaha	181	56	69	14	35	21
Kansas	134	54	59	35	16	9
Lawrence	250	0	0	0	0	0
Topeka	146	0	0	0	0	0
Wichita	143	75	82	54	20	7
South	132	62+	71+	32	27+	12
South Atlantic	127	62	69	32	27	10
Delaware	146	94	115	52	52	10
Wilmington	156	100	144+	44	100++	0
Maryland	125	77	81	36	32	13
Baltimore	119	73	79	30	34	15
Cumberland	103	69	69	34	34	0
Hagerstown	53	53	53	0	53	0
Dist. of Columbia	68	51	51	34	17	0
Washington	116	78	82	44	31	7
Virginia	130	58	67	31	29	7
Charlottesville	200	67	67	67	0	0
Danville	59	59	59	0	59	0
Lynchburg	48	0	0	0	0	0
Norfolk	98	46	46	34	11	0
Richmond	135	42	47	26	10	10
Roanoke	65	43	43	22	22	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
West Virginia	261	1.07--	14.19	203	46+	260
Charleston	38	1.11--	16.39	211	53	37
Huntington	22	0.54--	14.86	273	45	22
Parkersburg	44	2.21	10.68	227	45	44
Wheeling	22	1.00--	12.55	0-	45	22
North Carolina	835	1.21--	12.66	194	18	833
Asheville	49	2.00	15.08	163	20	49
Burlington	9	0.62--	12.78	111	0	9
Charlotte	132	1.21--	12.99	189	8	132
Fayetteville	14	1.05-	11.79	143	0	14
Greensboro	93	0.94--	13.44	194	11	93
Hickory	21	0.90--	13.19	238	48	21
Jacksonville	8	1.56	13.25	625	0	8
Raleigh-Durham	71	1.26-	13.62	239	0	71
Wilmington	12	0.95-	12.00	83	0	12
South Carolina	378	1.15--	13.61	220	11	378
Anderson	16	0.96--	15.19	125	0	16
Charleston	33	0.96--	17.21	242	30	33
Columbia	41	1.16--	15.02	390+	0	41
Florence	10	0.89--	11.70	200	0	10
Greenville	82	1.24--	13.11	232	0	82
Georgia	681	1.21--	13.06	179	32	676
Albany	21	2.26	12.86	190	0	21
Athens	17	1.26	13.12	235	59	16
Atlanta	217	1.14--	12.86	198	37	215
Augusta	20	0.61--	15.45	250	0	20
Columbus	38	1.66	14.92	158	79	38
Macon	32	1.23	16.50	125	94	31
Savannah	33	1.30	13.85	242	30	33

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the knee	Infectious compli- cations related to surgery	General surgical compli- cations
West Virginia	177+	88	96	50	31	15
Charleston	162	81	81	54	0	27
Huntington	136	91	91	45	45	0
Parkersburg	136	68	68	45	23	0
Wheeling	182	136	136	0	45	91+
North Carolina	132	61	65	26	24	14
Asheville	122	61	61	41	20	0
Burlington	111	111	111	111	0	0
Charlotte	136	61	61	30	15	15
Fayetteville	71	0	0	0	0	0
Greensboro	118	86	86	22	43	22
Hickory	95	48	48	0	48	0
Jacksonville	125	0	0	0	0	0
Raleigh-Durham	99	14	14	0	14	0
Wilmington	250	0	0	0	0	0
South Carolina	90-	50	53	34	13	5
Anderson	63	0	0	0	0	0
Charleston	121	0	0	0	0	0
Columbia	49	0	0	0	0	0
Florence	300	200	200	200	0	0
Greenville	73	85	98	73	24	0
Georgia	163+	90++	101+	49	38	13
Albany	143	95	143	95	0	48
Athens	188	0	0	0	0	0
Atlanta	237++	126++	135+	51	74++	9
Augusta	50	50	50	0	50	0
Columbus	53	79	105	105	0	0
Macon	161	129	129	0	129+	0
Savannah	121	91	91	91	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Florida	2,935	1.72++	12.39	170--	24	2,920
Bradenton	71	1.65	12.04	127-	28	71
Daytona Beach	119	1.90	13.62	126--	17	119
Fort Lauderdale	209	1.15--	13.62	215	33	206
Fort Myers	164	2.67++	10.95	122--	12	164
Fort Pierce	76	1.84	11.51	118-	26	75
Ft. Walton Beach	15	1.48	12.80	467	67	15
Gainesville	39	2.33	12.95	154	0	39
Jacksonville	111	1.37-	13.28	198	45	110
Lakeland	100	1.80	11.33	90--	30	100
Melbourne	89	1.91	13.67	101--	0	89
Miami-Hialeah	182	1.08--	15.48	187	27	182
Naples	42	1.79	10.29	119	0	42
Ocala	47	1.50	13.04	234	21	47
Orlando	147	1.62	12.54	163	27	146
Panama City	15	1.27	13.60	67	67	15
Pensacola	36	1.20-	14.36	361	0	36
Sarasota	157	2.02+	12.59	166	19	156
Tallahassee	29	1.67	13.31	241	0	29
Tampa	723	2.23++	11.24	155--	30	717
West Palm Beach	211	1.51	12.92	227	9	211
East South Central	1,963	1.14--	14.63	191	24	1,953
Kentucky	512	1.21--	14.55	176	21	508
Lexington	42	1.35	13.81	167	24	41
Louisville	182	1.69	14.65	148-	33	181
Owensboro	12	1.16	14.42	417	0	12
Tennessee	571	1.04--	14.62	161--	37	568
Chattanooga	77	1.54	12.18	221	0	77
Clarksville	25	1.99	14.16	120	40	25
Jackson	5	0.50--	16.40	0	0	5
Johnson City	35	0.64--	13.80	114	0	35
Knoxville	72	1.01--	14.89	167	14	71
Memphis	58	0.65--	17.28	172	17	58
Nashville	127	1.37-	15.22	118--	71++	125
Alabama	567	1.22--	14.96	273++	18	564
Anniston	12	0.91--	17.50	333	0	12
Birmingham	145	1.34--	14.79	234	28	145
Dothan	18	1.42	13.83	389	0	18
Florence	25	1.50	15.40	280	0	25
Gadsden	23	1.61	15.17	130	43	22
Huntsville	8	0.47--	13.88	125	0	8
Mobile	61	1.21--	18.97	344+	16	61
Montgomery	28	0.94--	14.75	179	0	28
Tuscaloosa	15	1.10	13.40	400	133	13

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the knee	Infectious compli- cations related to surgery	General surgical compli- cations
Florida	117	52	60	27	24	9
Bradenton	99	42	42	28	14	0
Daytona Beach	109	59	76	42	25	8
Fort Lauderdale	92	34	49	29	15	5
Fort Myers	122	55	73	6	49	18
Fort Pierce	93	40	40	27	13	0
Ft. Walton Beach	133	0	0	0	0	0
Gainesville	154	51	51	0	51	0
Jacksonville	145	45	45	27	18	0
Lakeland	100	10-	10-	10	0	0
Melbourne	135	45	45	11	22	11
Miami-Hialeah	176	88	99	44	22	33+
Naples	71	24	24	0	24	0
Ocala	43	43	43	43	0	0
Orlando	164	89	103	48	34	21
Panama City	67	67	67	67	0	0
Pensacola	111	56	83	83	0	0
Sarasota	103	19-	19--	6	13	0
Tallahassee	69	0	0	0	0	0
Tampa	114	71	81	38	36	7
West Palm Beach	114	28-	33-	14	14	5
East South Central	153++	74++	87++	33	34+	20++
Kentucky	144	59	65	28	16	22+
Lexington	146	73	73	24	0	49
Louisville	133	50	55	39	11	6
Owensboro	167	167	167	0	0	167+
Tennessee	162+	86+	107++	32	44+	32++
Chattanooga	91	65	65	39	13	13
Clarksville	320+	160	240+	0	120+	120++
Jackson	200	0	0	0	0	0
Johnson City	171	86	86	0	86	0
Knoxville	141	42	42	14	14	14
Memphis	69	52	121	52	69	0
Nashville	160	64	88	16	40	32
Alabama	145	73	83	41	37	5
Anniston	83	167	167	83	83	0
Birmingham	172	76	103	62	34	7
Dothan	111	56	56	0	56	0
Florence	40	120	120	40	40	40
Gadsden	45	0	0	0	0	0
Huntsville	375	125	125	125	0	0
Mobile	82	49	49	33	16	0
Montgomery	107	0	0	0	0	0
Tuscaloosa	77	77	77	0	77	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Index stay						
Area of residence	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Mississippi	313	1.08--	14.19	121--	19	313
Biloxi-Gulfport	32	1.77	14.53	63	0	32
Jackson	32	0.91--	14.09	125	0	32
Pascagoula	17	1.99	15.29	118	59	17
West South Central	4,505	1.74++	12.57	184--	25	4,482
Arkansas	416	1.29--	12.79	231	17	414
Fayetteville	19	1.61	12.42	158	0	19
Fort Smith	19	0.89--	11.84	211	0	19
Little Rock	59	1.16--	14.86	288	0	59
Pine Bluff	11	1.00-	12.27	273	0	11
Louisiana	666	1.60	12.75	156--	26	661
Alexandria	26	1.88	12.77	77	0	26
Baton Rouge	58	1.47	12.40	207	34	57
Houma-Thibodaux	19	1.41	11.84	0-	0	19
Lafayette	25	1.71	12.84	240	0	25
Lake Charles	24	1.46	13.71	292	42	24
Monroe	30	2.05	10.07	67	33	30
New Orleans	203	1.71	14.33	202	25	200
Shreveport	47	1.28	13.45	128	43	47
Oklahoma	698	1.84++	11.90	156--	27	694
Enid	10	1.22	12.40	100	0	10
Lawton	21	2.55	11.38	95	48	20
Oklahoma City	184	2.08++	11.22	147-	5	184
Tulsa	90	1.27--	13.09	178	44	90

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the knee	Infectious compli- cations related to surgery	General surgical compli- cations
Mississippi	166	77	93	29	42	22
Biloxi-Gulfport	94	31	94	31	63	0
Jackson	63	0	0	0	0	0
Pascagoula	118	0	0	0	0	0
West South Central	130	57	66	31	25	10
Arkansas	128	70	82	34	31	17
Fayetteville	158	53	53	53	0	0
Fort Smith	105	0	0	0	0	0
Little Rock	102	68	68	34	17	17
Pine Bluff	91	0	0	0	0	0
Louisiana	147	51	56	32	17	8
Alexandria	115	0	0	0	0	0
Baton Rouge	123	88	88	70	18	0
Houma-Thibodaux	211	0	0	0	0	0
Lafayette	80	40	40	0	0	40
Lake Charles	167	83	125	83	42	0
Monroe	167	0	0	0	0	0
New Orleans	165	50	55	35	10	10
Shreveport	149	0	0	0	0	0
Oklahoma	120	46	59	33	19	7
Enid	200	0	0	0	0	0
Lawton	0	0	0	0	0	0
Oklahoma City	130	82	125+	82++	38	5
Tulsa	111	33	33	0	33	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Texas	2,725	1.86++	12.66	190-	25	2,713
Abilene	18	1.37	13.50	167	56	18
Amarillo	75	3.93++	11.24	200	27	75
Austin	107	2.25++	11.99	206	19	106
Beaumont	68	1.61	11.00	176	29	68
Brazoria	18	1.44	11.33	222	0	18
Brownsville	54	2.68++	12.41	167	0	54
Bryan	15	2.16	12.73	133	0	15
Corpus Christi	64	2.25+	13.03	125-	31	64
Dallas	257	1.49	12.94	233	16	257
El Paso	61	1.64	13.52	213	16	61
Fort Worth	162	1.65	13.96	259	19	161
Galveston	41	2.12	12.27	171	24	41
Houston	273	1.45-	12.43	223	33	271
Killeen-Temple	30	1.75	9.93	100	33	30
Laredo	13	1.54	11.00	77	0	13
Longview	31	1.51	13.13	194	65	31
Lubbock	64	3.38++	14.56	203	31	64
McAllen	58	2.12	11.86	86--	34	57
Midland	6	0.81-	10.67	333	0	6
Odessa	9	0.98-	10.22	222	111	9
San Angelo	26	2.32	11.12	0--	38	26
San Antonio	160	1.48	13.43	156	25	159
Sherman-Denison	20	1.38	13.90	550++	0	20
Texarkana	12	0.78--	13.00	417	0	12
Tyler	25	1.37	12.84	120	0	25
Victoria	23	3.35+	13.52	130	0	23
Waco	28	1.19-	11.54	143	71	28
Wichita Falls	37	2.56+	12.95	135	54	36
West	8,270	1.82++	10.85	211	25	8,236
Mountain	2,958	2.46++	10.94	197	24	2,944
Montana	201	2.07++	11.48	179	15	201
Billings	37	3.06++	13.30	162	54	37
Great Falls	10	1.10	11.80	0	0	10
Idaho	349	3.18++	10.62	160-	23	346
Boise City	53	2.87++	12.89	113-	19	52
Wyoming	105	2.48++	10.94	152	19	105
Casper	9	1.67	10.78	0	111	9
Cheyenne	14	2.03	11.57	286	0	14

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the knee	Infectious compli- cations related to surgery	General surgical compli- cations
Texas	128	59	68	30	27	11
Abilene	56	56	56	56	0	0
Amarillo	173	40	40	13	13	13
Austin	104	85	85	38	38	9
Beaumont	221	118	191++	88+	74+	29
Brazoria	111	56	56	56	0	0
Brownsville	56	19	19	19	0	0
Bryan	67	0	0	0	0	0
Corpus Christi	156	78	78	31	31	16
Dallas	113	51	58	27	23	8
El Paso	49	0	0-	0	0	0
Fort Worth	130	50	68	12	43	12
Galveston	98	24	24	24	0	0
Houston	181+	77	92	41	41	11
Killeen-Temple	133	33	33	0	33	0
Laredo	77	0	0	0	0	0
Longview	161	65	65	32	0	32
Lubbock	109	47	63	63	0	0
McAllen	88	18	18	18	0	0
Midland	167	167	167	0	167	0
Odessa	222	111	111	0	111	0
San Angelo	38	38	77	38	38	0
San Antonio	132	75	82	31	44	6
Sherman-Denison	50	50	50	50	0	0
Texarkana	250	83	167	0	83	83
Tyler	200	160	240+	40	80	120++
Victoria	174	130	130	130	0	0
Waco	71	71	71	71	0	0
Wichita Falls	111	111	139	83	0	56
West	133	57	67	32	25	11
Mountain	148++	57	67	37	20	10
Montana	149	30-	40	25	15	0
Billings	54	27	54	27	27	0
Great Falls	100	0	0	0	0	0
Idaho	156	69	72	26	29	17
Boise City	58	38	38	19	19	0
Wyoming	162	67	86	67	19	0
Casper	111	0	0	0	0	0
Cheyenne	0	143	143	143	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Colorado	646	2.42++	10.41	217	28	642
Boulder-Longmont	30	1.98	9.97	200	100	29
Colorado Springs	69	2.77++	9.36	116-	29	69
Denver	262	2.19++	11.05	263+	4-	261
Fort Collins	46	3.05++	10.02	326	0	46
Greeley	50	4.31++	11.08	220	40	50
Pueblo	37	2.41	11.57	135	108+	35
New Mexico	257	2.05++	11.54	132--	16	256
Albuquerque	48	1.42	12.25	104	0	48
Las Cruces	18	1.92	15.89	167	0	18
Santa Fe	8	0.95-	12.38	125	0	8
Arizona	849	2.43++	11.93	218	21	844
Phoenix	438	2.34++	12.50	224	27	433
Tucson	167	2.37++	12.38	257	0-	167
Utah	387	3.01++	10.06	248	31	387
Provo-Orem	52	3.23++	9.83	250	0	52
Salt Lake City	214	2.77++	10.07	266	28	214
Nevada	164	2.00+	9.08	128--	30	163
Las Vegas	98	2.17+	9.26	143	51	97
Reno	32	1.67	8.78	94	0	32
Pacific	5,312	1.59-	10.80	218	26	5,292
Washington	1,026	2.22++	9.98	222	25	1,023
Bellingham	31	2.27	8.74	65	0	31
Bremerton	36	2.33	10.53	194	0	36
Olympia	35	2.46+	9.03	114	0	35
Richland	28	2.23	10.04	143	0	28
Seattle	319	2.00++	10.97	235	25	318
Spokane	105	2.55++	10.61	514++	19	105
Tacoma	93	1.85	8.47	97--	43	91
Vancouver	33	1.94	10.03	152	61	33
Yakima	53	2.33+	10.38	208	38	53
Oregon	407	1.34--	10.59	194	22	406
Eugene	28	0.97--	11.32	286	36	28
Medford	32	1.57	10.50	156	0	32
Portland	112	1.13--	11.57	205	27	111
Salem	48	1.44	11.38	146	21	48

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the knee	Infectious compli- cations related to surgery	General surgical compli- cations
Colorado	151	51	58	25	16	17
Boulder-Longmont	138	34	34	0	34	0
Colorado Springs	217	101	101	43	29	29
Denver	169	54	65	19	27	19
Fort Collins	87	109	109	87	0	22
Greeley	140	20	20	0	0	20
Pueblo	86	29	29	29	0	0
New Mexico	133	35	51	31	16	4
Albuquerque	83	0	0	0	0	0
Las Cruces	111	0	0	0	0	0
Santa Fe	250	0	0	0	0	0
Arizona	146	56	63	32	21	9
Phoenix	143	51	51	32	9--	9
Tucson	180	66	90	48	36	6
Utah	150	83	106+	70+	28	8
Provo-Orem	192	38	38	0	19	19
Salt Lake City	150	89	121+	93++	23	5
Nevada	141	61	61	55	0-	6
Las Vegas	175	82	82	82+	0	0
Reno	63	0	0	0	0	0
Pacific	125	58	67	29	27	11
Washington	107-	51	58	30	21	7
Bellingham	65	0	0	0	0	0
Bremerton	111	0	0	0	0	0
Olympia	143	57	86	57	29	0
Richland	36	36	71	36	36	0
Seattle	138	66	72	28	25	19
Spokane	76	19	19	0	10	10
Tacoma	55--	55	77	66	11	0
Vancouver	30	61	61	61	0	0
Yakima	94	57	57	38	19	0
Oregon	135	74	89	30	39	20
Eugene	71	36	36	0	36	0
Medford	125	63	94	0	31	63
Portland	108	72	81	45	18	18
Salem	208	125	125	42	63	21

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
California	3,799	1.53--	10.99	219	26	3,783
Anaheim-Santa Ana	286	1.71	11.15	364++	10	284
Bakersfield	81	1.80	11.37	160	12	80
Chico	63	2.32+	8.44	111-	32	63
Fresno	79	1.35	9.47	418++	25	78
Los Angeles	897	1.32--	12.10	213	31	893
Merced	17	1.26	9.65	176	0	17
Modesto	72	2.14+	10.50	111--	28	72
Oakland	252	1.34--	11.16	210	48+	251
Oxnard-Ventura	70	1.41	11.49	243	14	70
Redding	43	2.42+	9.65	93	47	43
Riverside	417	2.05++	11.14	245	29	416
Sacramento	153	1.27--	10.39	157	26	152
Salinas	42	1.44	9.29	119	0	42
San Diego	339	1.65	8.97	139--	18	339
San Francisco	180	1.10--	11.94	256	61++	178
San Jose	124	1.18--	11.08	274	0	124
Santa Barbara	105	2.76++	12.89	76--	38	105
Santa Cruz	34	1.38	10.06	118	0	34
Santa Rosa	80	1.79	11.64	238	38	79
Stockton	54	1.32	9.20	204	0	54
Vallejo	41	1.15--	11.32	146	49	41
Visalia	58	2.01	10.72	379++	17	57
Yuba City	17	1.44	10.47	176	59	17
Alaska	27	1.65	15.22	370	37	27
Anchorage	8	1.42	14.63	375	0	8
Hawaii	53	0.66--	12.66	189	0	53
Honolulu	47	0.81--	12.51	213	0	47

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total knee replacement: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the knee	Infectious complications related to surgery	General surgical complications
California	128	58	68	29	28	11
Anaheim-Santa Ana	144	63	85	21	53++	11
Bakersfield	75	50	75	25	38	13
Chico	127	16	16	0	16	0
Fresno	64	51	77	26	51	0
Los Angeles	150+	64	74	32	30	11
Merced	118	118	176	59	118	0
Modesto	153	42	42	0	0	42
Oakland	127	68	76	48	20	8
Oxnard-Ventura	71	57	57	43	0	14
Redding	140	47	47	0	23	23
Riverside	123	53	55	29	14	12
Sacramento	112	26	26	13	7	7
Salinas	143	24	24	0	24	0
San Diego	106	62	74	38	27	9
San Francisco	135	56	62	22	34	6
San Jose	56--	48	48	24	8	16
Santa Barbara	86	38	57	38	10	10
Santa Cruz	118	29	59	0	59	0
Santa Rosa	152	63	63	13	25	25
Stockton	148	19	19	19	0	0
Vallejo	195	122	122	98	24	0
Visalia	298++	140+	246++	18	211++	18
Yuba City	235	176	176	0	0	176++
Alaska	74	0	0	0	0	0
Anchorage	0	0	0	0	0	0
Hawaii	208	57	57	19	19	19
Honolulu	234	64	64	21	21	21

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Reduction of fracture of the femur

In 1986, 187,739 Medicare enrollees 65 years of age or over who did not have end stage renal disease and were not members of health maintenance organizations were hospitalized with fracture of the neck of the femur, commonly described as hip fracture (ICD-9-CM code 820). This study is confined to approximately 95,000 patients who were hospitalized with a principal diagnosis of fracture of the neck of the femur and treated by reduction with internal fixation. Excluded from this study are hip fracture patients with different treatments, such as partial hip replacement (described separately in this volume in the section on replacement of the head of the femur). Other excluded cases are discussed later. The purpose of this study is to provide information on the outcomes of reduction of fracture of the femur, especially to identify the rate and types of adverse events.

To help define the diagnoses and surgical interventions on which to focus for hip fracture patients and to identify the diagnoses and procedures that are likely to signal potential adverse outcomes following treatment, a panel of orthopedic surgeons was convened. Because the patterns of adverse outcomes following reduction are known to be different for patients with pertrochanteric fractures than for patients with transcervical fractures, separate tables have been generated for the two types of patient.

Rates for specific events

The ICD-9-CM codes that were used for selecting cases for this study and the diagnoses and procedures (with their ICD-9-CM codes) used to identify adverse outcomes for patients hospitalized with pertrochanteric fractures are provided in Table 1a; corresponding information for patients hospitalized with transcervical fractures is shown in Table 1b. The conditions represented by these diagnoses and procedures are referred to as adverse events. The focus of this study is on adverse events occurring both in the index stay, when the surgery was performed, and in subsequent admissions.

Tables 1a and 1b also include information on which codes were counted as adverse events if they occurred in the index stay, which codes were

counted if they were the principal diagnosis for a readmission following reduction of fracture of the femur, and the time interval required in order to include a readmission (for example, within 30 days of the date of surgery).

Pertrochanteric fracture with reduction

All patients with an ICD-9-CM principal diagnosis code of 820.2 (pertrochanteric fracture) and a principal ICD-9-CM procedure code of 79.15 or 79.35 (reduction with internal fixation) were included in the study. If the hip fracture patient had certain secondary diagnoses, such as cancer, the case was excluded. Potential adverse events either in the index stay or in a readmission were categorized into four event groups:

1. Noninfectious problems related to the hip.
2. Infectious complications related to surgery.
3. General surgical complications.
4. Other events.

Of all hip fracture cases occurring in 1986, 75,101 met the criteria for inclusion. As shown in Table 1a, for every 1,000 reductions performed, 461.06 events indicating potential adverse outcomes were recorded during the index stay. These events were identified as secondary diagnoses in the claims record for the index stay; that is, the principal diagnosis indicated pertrochanteric hip fracture, the procedure indicated reduction, and the secondary diagnoses were those identified as potential adverse events.

Event Group 3, general surgical complications, accounted for 253.61 events per 1,000 procedures in the index stay, or 55 percent of adverse events. Of these, the most frequent were congestive heart failure (74.47 events per 1,000 procedures) and acute posthemorrhagic anemia (61.14 per 1,000).

The second largest category of events in the index stay was Event Group 2, infectious complications related to surgery, which accounted for 206.03 events for every 1,000 reductions, or 45 percent. The largest number of events recorded in that group was for urinary tract infection, site not specified—144.29 events for every 1,000 procedures.

These patients with pertrochanteric fractures were followed for subsequent hospitalizations with a principal diagnosis signaling an adverse event. For every 1,000 patients discharged alive, 59.88 such readmissions were found. Readmissions that were for principal diagnoses not included in the list

NOTE: For reduction of fracture of the femur, records of hospital stays with principal ICD-9-CM procedure code 79.15 or 79.35 and principal ICD-9-CM diagnosis code 820.0, 820.2, or 820.8 were selected.

of events identified by the orthopedic surgeons as potential adverse outcomes from the surgery are not included in Table 1a. Noninfectious problems related to the hip (Event Group 1)—that is, problems relating to the healing of the fracture—accounted for more than one-third of the readmissions (23.26 readmissions per 1,000 persons discharged alive). Mechanical complications within 90 days and those occurring from 91 days to 1 year together accounted for 16.64 readmissions per 1,000 persons discharged alive. The other two major categories, infectious complications related to surgery (Event Group 2) and general surgical complications (Event Group 3) accounted for 17.28 and 19.34 readmissions per 1,000 patients discharged alive, respectively. Decubitus ulcer was a relatively important cause for readmission in Event Group 3, general surgical complications, accounting for 6.14 readmissions per 1,000 persons discharged alive.

Transcervical fracture with reduction

Table 1b contains information on patients with transcervical fractures who were treated by reduction with internal fixation. It should be noted that the majority of patients with transcervical fractures are treated by replacement of the head of the femur; outcomes for such patients are followed in that section. In 1986, after excluding certain cases because of secondary diagnoses such as cancer, 19,719 cases were identified that met the criteria: principal ICD-9-CM diagnosis code of 820.0 (transcervical fracture) or 820.8 (unspecified part of neck of femur) and a principal ICD-9-CM procedure code of 79.15 or 79.35 (reduction with internal fixation) (see Table 1b for codes). Potential adverse events in either the index stay or in a readmission were categorized into five event groups:

1. Replacement of the head of the femur.
2. Other noninfectious problems related to the hip.
3. Infectious complications related to surgery.
4. General surgical complications.
5. Other events.

The rate of complications in the index stay was less for patients with transcervical fractures than for patients with pertrochanteric fractures (342.31 versus 461.06 events per 1,000 procedures). As with pertrochanteric fracture, congestive heart failure (in Event Group 4) and urinary tract infection, site not specified (in Event Group 3) were frequently associated with transcervical fractures (64.76 and 118.01 events per 1,000 procedures, respectively). Acute posthemorrhagic anemia (in Event Group 4) was more frequently reported as a complication in the index stay for

perthrochanteric fractures than for transcervical fractures, 61.14 versus 23.38 events per 1,000 procedures.

The rate of readmission with an adverse event for patients with transcervical fractures was 96.55 readmissions per 1,000 persons discharged alive (Table 1b). This rate was 61 percent greater than that for patients with pertrochanteric fractures, who were readmitted at a rate of 59.88 per 1,000 persons discharged alive. Of the readmissions for patients with transcervical fractures, about one in four (25.76) were for replacement of the head of the femur (Event Group 1). Although we can determine that these readmissions were for patients previously discharged with transcervical fractures who had reductions, the replacement of the head of the femur in a subsequent stay might be for the opposite hip to the one previously operated on. The coding system does not distinguish left from right side. Thus, additional information, available from the medical records but not in the Medicare data system, would be necessary to estimate what proportion of these replacements of the head of the femur were for the same hip on which the reduction had been performed.

The highest readmission rate was associated with Event Group 2, other noninfectious problems related to the hip (41.66 readmissions per 1,000 persons discharged alive). Mechanical complications occurring before 90 days and from 91 days to 1 year were responsible for 7.56 and 11.12 readmissions per 1,000 persons discharged alive, respectively. Aseptic necrosis of the head and the neck of the femur caused 10.76 readmissions per 1,000 live discharges. Event Group 3, infectious complications related to surgery, accounted for 14.01 readmissions, and general surgical complications (Event Group 4) accounted for an additional 15.11 readmissions per 1,000 persons discharged alive.

Patterns by age, sex, and race

Petrochanteric fracture with reduction

As shown in Table 2a, the rate of reduction for pertrochanteric fractures in 1986 was 2.81 per 1,000 enrollees. This rate increased dramatically with age, rising from 0.82 procedures per 1,000 enrollees 65-74 years of age to 12.23 procedures per 1,000 enrollees 85 years of age or over. (Of the procedures covered in this volume, this is the procedure most frequently performed for persons 75-84 years of age and for those 85 years of age or over.) In each of the three age groups, the rates for women were about twice as high as those for men. In each age and sex group, the rate for white persons was higher than that for black persons.

The average length of stay (ALOS) for persons undergoing reduction of a pertrochanteric fracture was 14.85 days. This did not vary substantially by age. Men had a slightly longer ALOS (15.15 days) than women had (14.77 days). Black persons had a longer ALOS than white persons had (17.33 days versus 14.76 days).

The number of patients with reduction of pertrochanteric fractures who experienced events during the index stay was 360 persons per 1,000 procedures. Of the procedures covered in this volume, persons with reduction of pertrochanteric fractures experienced the highest rate of events during the index stay. The number increased with age, was similar for men and women, and was similar for white persons and black persons.

Of every 1,000 persons with reduction for pertrochanteric fracture, 223 died within 1 year of surgery. Thus, more than 20 percent of patients treated with reduction of pertrochanteric fracture died within 1 year of their surgery. There were more deaths for men than for women in each age group. More than 40 percent of men 85 years of age or over died within 1 year. In each age and sex group, black persons had higher death rates than white persons.

The number of patients with one readmission or more for any cause within 90 days of surgery was 173 persons per 1,000 live discharges. This means that nearly one in five persons with reduction for pertrochanteric fracture was readmitted to the hospital for any cause within 90 days of surgery. The 90-day readmission rate rose slightly with age and was higher for men than women. No steady pattern was found for white persons compared with black persons. The number of persons with one readmission or more with an event was 56 per 1,000 persons discharged alive—that is, about 6 percent were readmitted because of a potentially adverse event.

The right side of Table 2a contains information on readmission rates for the three major event groups shown in Table 1a. Rates of readmissions for Event Group 1, noninfectious problems related to the hip (the largest event group), tended to decline with age. The rate was higher for women than men and higher for white persons than black persons. For the other two event groups, readmissions increased slightly as age increased, and rates tended to be higher for men than women and higher for black persons than white persons.

Transcervical fracture with reduction

As shown in Table 2b, the rate of reduction for transcervical fractures in 1986 was 0.74 procedure per 1,000 enrollees. The rate rose with age, increasing from 0.31 per 1,000 enrollees

65-74 years of age to 2.50 per 1,000 enrollees 85 years of age or over. The rate was substantially higher for women than men. In each age and sex group, the rate for white persons exceeded that for black persons.

The number of persons who experienced adverse events during the index stay was 278 per 1,000 procedures. The number rose with age, was similar for men and women, and was higher for black persons than white persons.

The number of persons with reductions for transcervical fracture who died within 1 year was 195 per 1,000 procedures, a little lower than the rate for pertrochanteric fracture. The number of persons with one readmission or more for any cause within 90 days was similar for both types of fracture.

ALOS for persons undergoing reduction of a transcervical fracture was 13.09 days. ALOS increased slightly with age, from 11.97 days for persons 65-74 years of age to 13.93 days for persons 85 years of age or over. Men experienced a slightly longer ALOS (13.75 days) than did women (12.92 days). Black persons had a longer ALOS than did white persons (15.70 days versus 13.00 days).

The number of persons with transcervical fracture who experienced one readmission or more because of an event was 89 per 1,000 persons discharged alive. This rate was more than 50 percent greater than that for persons with pertrochanteric fracture.

The right side of Table 2b contains information on readmission rates for persons with transcervical fracture by event group. Women were more likely than men to be readmitted for Event Group 1, replacement of the head of the femur. Except for the oldest age group, women also were more frequently readmitted for Event Group 2, other noninfectious problems related to the hip. In contrast, men tended to have more readmissions for the other two adverse event groups. Black persons tended to experience more readmissions than did white persons for Event Group 4, general surgical complications, but fewer readmissions for replacement of the head of the femur (Event Group 1) and for other noninfectious problems related to the hip (Event Group 2).

Variations by geographic area

Tables 3a, 3b, 4a, and 4b contain data on adverse events following reduction for pertrochanteric and transcervical fractures by geographic area. Data by metropolitan and rural areas within each State are shown in Tables 3a and 3b, and data by metropolitan statistical

area (MSA) are shown in Tables 4a and 4b. The figures were derived from the data in these tables.

Tables 3a, 3b, 4a, and 4b contain data for the same measures that are shown by age, sex, and race in Table 2. Data for areas in which the rate was significantly different from the national average are annotated with a "+" or "-" if the local rate was different at the $p = 0.05$ level and with a "++" or "--" if the local rate was different at the $p = 0.01$ level. Details on the statistical tests are contained in the appendix.

The data shown in Tables 3a and 3b are summarized by U.S. census region in Tables A and B. Table A contains information on patients treated by reduction for pertrochanteric fractures; Table B contains the same type of information on patients treated by reduction for transcervical fractures.

For patients treated for pertrochanteric fracture, the Northeast Region had the longest ALOS and the highest rate of persons with events during the index stay. In contrast, the Northeast had the lowest rate of readmissions within 90 days for any

cause, the lowest rate of readmissions with events, and the lowest rate of readmissions for the most frequent category of events, Event Group 1 (noninfectious problems related to the hip).

For patients treated for transcervical fracture, the same general pattern was found for the Northeast; that is, patients in the Northeast with reduction for transcervical fracture had a relatively long ALOS and a high rate of events in the index stay but a relatively low rate of readmissions.

An opposite pattern appears for the South. In that region, the rate of events in the index stay for both types of fracture patients was statistically significantly lower than the U.S. rate, whereas the 90-day readmission rate for any cause was significantly higher than the U.S. rate. ALOS in the South was close to the national average.

Figures 1a and 1b are illustrations of the variations across the Nation in the number of readmissions for events related to the index stay per 1,000 persons discharged alive. No consistent geographic patterns were found. In some States (e.g., Kentucky), readmission rates for adverse

Table A. Selected statistics on reduction of fracture of the femur for aged Medicare enrollees with pertrochanteric fracture, by region: United States, 1986 index stays

Region	Average length of stay in days	Number of patients per 1,000 procedures		Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions for largest event category per 1,000 live discharges
		With 1 event or more in index stay	Dying within 1 year of surgery	Within 90 days for any cause	With an event	
United States	14.85	360	223	173	56	23
Northeast	20.02	400++	223	159--	49--	20--
North Central	13.21	366+	220	166--	55	23
South	14.21	330--	224	190++	61++	24
West	11.76	354	223	171	60	28++

NOTES: Members of health maintenance organizations and persons with end stage renal disease are excluded. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table B. Selected statistics on reduction of fracture of the femur for aged Medicare enrollees with transcervical fracture, by region: United States, 1986 index stays

Region	Average length of stay in days	Number of patients per 1,000 procedures		Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions for largest event category per 1,000 live discharges
		With 1 event or more in index stay	Dying within 1 year of surgery	Within 90 days for any cause	With an event	
United States	13.09	278	195	172	89	42
Northeast	17.64	313++	187	148--	84	38
North Central	11.88	284	199	174	88	44
South	12.58	257--	200	188++	91	38
West	10.27	269	188	169	92	50

NOTES: Members of health maintenance organizations and persons with end stage renal disease are excluded. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

events were high for both types of fractures. In other States (e.g., Oregon), readmission rates were relatively low for both types of fractures. However, in some States, the readmission rate was high or low for one type of fracture and the reverse was true for the other type of fracture.

Urban-rural patterns

Tables 3a and 3b contain information that can be used to compare differences in patterns of adverse events between urban and rural areas. In the Nation as a whole, ALOS for pertrochanteric fractures was higher in urban areas (15.49 days) than in rural areas (13.14 days). In addition, the number of persons with events in the initial stay per 1,000 procedures was less in rural than in urban areas (347 versus 365 persons with events per 1,000 procedures). The reverse was true for readmissions. More persons were readmitted per 1,000 persons discharged alive—within 90 days or with adverse events—in rural areas than in urban areas. For each event group, rates of readmissions per 1,000 persons discharged alive were also higher in rural areas than in urban areas, although the differences were not large.

With regard to transcervical fractures, the only statistically significant urban-rural difference in the national figures was the rate of readmissions for any cause within 90 days. For that measure, the rate was higher in rural areas (186 readmissions per 1,000 persons discharged alive) than urban areas (167 per 1,000). ALOS, for which no statistical test was performed, was longer in urban areas (13.58 days) than in rural areas (11.82 days).

Correlations between rates

Pearson correlation coefficients were computed between several pairs of outcome measures, using MSA-level rates for rural areas within States. This was done to determine whether areas with high rates of one measure of adverse outcome were also high on other measures. MSAs with less than five expected events were excluded from the computation of correlations because of small sample size. The number of expected events is the product of the national average rate times the number of procedures in an area.

Correlation coefficients were also computed between ALOS and rates of events in the index stay and between ALOS and rates of readmissions. This was done to examine the hypothesis that areas

with high ALOS might have high rates of events within the index stay because of the longer time for adverse events to appear. Areas with high ALOS might also have lower rates of readmissions because more problems would be taken care of in the index stay.

Petrochanteric fracture with reduction

No significant association was found between the number of persons with one event or more in the index stay per 1,000 procedures and the number of persons with one readmission or more with an event per 1,000 persons discharged alive ($r = 0.07$, $n = 177$). Furthermore, there was no significant association between deaths within a year of surgery and the number of persons with one readmission or more with an event per 1,000 persons discharged alive ($r = 0.03$, $n = 177$).

For reduction of petrochanteric fracture, the correlation between ALOS and the rate of adverse events in the index stay was positive and significant at the 0.05 level ($r = 0.32$, $n = 362$). The correlation between ALOS and the rate of readmissions with an event was negative and significant at the 0.05 level ($r = -0.26$, $n = 188$). These correlations are consistent with the hypothesis just described. However, the correlation between ALOS and readmissions within 90 days for any reason was negative but not significant ($r = -0.04$, $n = 331$).

Transcervical fracture with reduction

No significant association was found between the number of persons with one event or more in the index stay per 1,000 procedures and the number of persons with one readmission or more with an event per 1,000 persons discharged alive ($r = -0.15$, $n = 97$). There was also no significant association between deaths within a year of surgery and the number of persons with one readmission or more with an event per 1,000 persons discharged alive ($r = -0.05$, $n = 97$).

The correlation between ALOS and the rate of adverse events in the index stay was positive and significant at the 0.05 level ($r = 0.32$, $n = 209$). The correlation between ALOS and the rate of readmissions with an event was negative but not significant ($r = -0.13$, $n = 105$); similarly, the correlation between ALOS and readmissions within 90 days for any reason was negative but not significant ($r = -0.14$, $n = 152$).

Table 1a. Reduction of pertrochanteric fracture of the femur: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986 index stays (Number of procedures: 75,101. Number of live discharges: 71,878. Reduction of pertrochanteric fracture of the femur must include ICD-9-CM principal procedure code 79.15 or 79.35 and principal diagnosis code 820.2. Stays are excluded if the following diagnosis codes are in any position: 733.42, 733.40, or 140-208.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmissions within(1)		
Total	--	--	--	461.06	59.88
1. Noninfectious problems related to the hip	--	--	--	1.41	23.26
Mechanical complication of internal orthopedic device, implant, and graft--early	996.4	No	90 days	--	7.68
Mechanical complication of internal orthopedic device, implant, and graft--late	996.4	No	91 days-1 year	--	8.96
Other complications of internal prosthetic device, implant, and graft	996.7	Yes(2)	30 days	1.41	0.24
Aseptic necrosis of head and neck of femur	733.42	No	1 year	--	0.00
Aseptic necrosis of bone, site unspecified	733.40	No	1 year	--	0.00
Malunion of fracture	733.81	No	1 year	--	1.02
Nonunion of fracture	733.82	No	90 days-1 year	--	5.23
Dislocation of hip	835	No	1 year	--	0.14
2. Infectious complications related to surgery	--	--	--	206.03	17.28
Other bacterial pneumonia	482	Yes	30 days	5.65	1.47
Bronchopneumonia, organism unspecified	485	Yes	30 days	1.68	0.42
Pneumonia, organism unspecified	486	Yes	30 days	19.93	4.16
Respiratory complications	997.3	Yes	30 days	13.28	0.22
Postoperative infection	998.5	Yes	30 days	8.44	1.47
Acute cystitis	595.0	Yes	30 days	1.53	0.08
Cystitis, unspecified	595.9	Yes	30 days	3.29	0.14
Urinary tract infection, site not specified	599.0	Yes	30 days	144.29	3.51
Acute pyelonephritis	590.1	Yes	30 days	0.27	0.35
Other pyelonephritis or pyonephrosis, not specified as acute or chronic	590.8	Yes	30 days	0.35	0.14
Infection of kidney, unspecified	590.9	Yes	30 days	0.00	0.00
Septicemia	038	Yes	30 days	5.10	2.35
Other cellulitis and abscess, unspecified site	682.9	Yes	30 days	0.11	0.01
Other cellulitis and abscess, leg, except foot	682.6	Yes	30 days	0.91	0.07
Other infection	999.3	Yes	30 days	0.16	0.00
Infection and inflammatory reaction due to internal prosthetic device, implant, and graft	996.6	No	1 year	--	2.63
Disruption of operation wound	998.3	Yes	21 days	1.07	0.25

(1)Measured from date of surgery to date of readmission.

(2)Included only if procedure code 81.6 is not present.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1a. Reduction of pertrochanteric fracture of the femur: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986 index stays (Number of procedures: 75,101. Number of live discharges: 71,878. Reduction of pertrochanteric fracture of the femur must include ICD-9-CM principal procedure code 79.15 or 79.35 and principal diagnosis code 820.2. Stays are excluded if the following diagnosis codes are in any position: 733.42, 733.40, or 140-208.)

Event	ICD-9-CM code	Index stay	Included if occurs in:	Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
			Readmissions within(1)		
3. General surgical complications	--	--	--	253.61	19.34
Peripheral vascular complications	997.2	Yes	30 days	3.57	0.65
Acute reaction to foreign substance accidentally left during a procedure	998.7	Yes	1 year	0.01	0.00
Acute edema of lung, unspecified	518.4	Yes	30 days	1.11	0.11
Pulmonary insufficiency following trauma and surgery	518.5	Yes	30 days	1.37	0.01
Retention of urine	788.2	Yes	30 days	15.57	0.22
Incontinence of urine	788.3	Yes	30 days	4.77	0.01
Other vascular complications	999.2	Yes	30 days	0.35	0.00
Foreign body accidentally left during a procedure	998.4	Yes	1 year	0.03	0.01
Other specified complications of procedures, not elsewhere classified	998.8	Yes	30 days	10.33	0.07
Unspecified complication of procedure, not elsewhere classified	998.9	Yes	30 days	0.27	0.00
Postoperative shock	998.0	Yes	30 days	0.79	0.01
Accidental puncture or laceration during a procedure	998.2	Yes	30 days	0.43	0.00
Hemorrhage or hematoma complicating a procedure	998.1	Yes	30 days	10.29	0.45
Iron deficiency anemia, unspecified	280.9	Yes	30 days	10.95	0.03
Trigonitis	595.3	Yes	30 days	0.07	0.00
Pulmonary embolism and infarction	415.1	Yes	30 days	9.83	2.66
Phlebitis and thrombophlebitis	451	Yes	30 days	4.31	1.78
Other venous embolism and thrombosis	453	Yes	30 days	3.16	1.34
Acute myocardial infarction	410	Yes	30 days	11.49	1.02
Acute, but ill-defined, cerebrovascular disease	436	Yes	30 days	6.60	0.90
Decubitus ulcer	707.0	Yes	180 days	16.54	6.14
Iron deficiency anemia, secondary to inadequate dietary iron intake	280.1	Yes	30 days	0.19	0.00
Acute posthemorrhagic anemia	285.1	Yes	30 days	61.14	0.04
Congestive heart failure	428.0	Yes	30 days	74.47	2.37
Subarachnoid hemorrhage	430	Yes	30 days	0.08	0.04
Intracerebral hemorrhage	431	Yes	30 days	0.23	0.10
Other and unspecified intracranial hemorrhage	432	Yes	30 days	0.31	0.10
Occlusion of cerebral arteries	434	Yes	30 days	5.38	1.28
4. Other events	--	--	--	--	--
Mononeuritis of lower limb (lesion of sciatic nerve)	355.0	Yes	7 days	0.01	0.00

(1) Measured from date of surgery to date of readmission.

(2) Included only if procedure code 81.6 is not present.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986 index stays

Race, sex, and age	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
All persons(2)	75,101	2.81	14.85	360	223	71,878
65-74 years	13,207	0.82	14.17	284	128	12,902
75-84 years	31,117	3.88	15.00	351	195	29,906
85 years or over	30,777	12.23	14.98	401	291	29,070
Men	15,135	1.42	15.15	361	317	14,025
65-74 years	3,771	0.53	14.51	291	192	3,624
75-84 years	6,530	2.24	15.44	353	304	6,068
85 years or over	4,834	7.09	15.27	426	432	4,333
Women	59,966	3.74	14.77	359	199	57,853
65-74 years	9,436	1.04	14.03	281	103	9,278
75-84 years	24,587	4.81	14.89	351	166	23,838
85 years or over	25,943	14.15	14.93	396	265	24,737
White	70,392	2.99	14.76	360	222	67,366
65-74 years	12,156	0.86	14.03	281	126	11,879
75-84 years	29,215	4.09	14.93	351	194	28,083
85 years or over	29,021	13.00	14.91	402	291	27,404
Men	14,016	1.49	15.05	361	318	12,984
65-74 years	3,425	0.55	14.28	289	190	3,293
75-84 years	6,039	2.35	15.37	353	304	5,613
85 years or over	4,552	7.58	15.20	424	432	4,078
Women	56,376	3.97	14.69	360	199	54,382
65-74 years	8,731	1.09	13.94	278	101	8,586
75-84 years	23,176	5.08	14.81	350	165	22,470
85 years or over	24,469	14.99	14.85	398	265	23,326
Black	2,181	1.09	17.33	350	248	2,086
65-74 years	473	0.39	17.80	328	163	460
75-84 years	847	1.45	17.00	340	220	814
85 years or over	861	4.40	17.39	372	322	812
Men	563	0.71	17.45	348	325	519
65-74 years	179	0.34	18.17	307	212	172
75-84 years	234	1.09	17.67	333	308	217
85 years or over	150	2.58	16.27	420	487	130
Women	1,618	1.35	17.28	350	221	1,567
65-74 years	294	0.42	17.57	340	133	288
75-84 years	613	1.67	16.74	343	186	597
85 years or over	711	5.17	17.63	361	287	682

(1)Includes "other events" category.

(2)Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986 index stays

Race, sex, and age	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious complications related to surgery	General surgical complications
All persons(2)	173	56	60	23	17	19
65-74 years	151	58	62	32	15	15
75-84 years	174	57	61	25	17	19
85 years or over	183	54	57	17	19	21
Men	222	62	66	18	27	22
65-74 years	186	60	64	25	23	17
75-84 years	229	62	66	17	27	22
85 years or over	242	65	67	12	31	24
Women	162	55	58	25	15	19
65-74 years	137	57	62	35	12	15
75-84 years	160	56	60	27	14	18
85 years or over	173	53	55	18	17	21
White	173	56	59	23	17	19
65-74 years	150	57	62	32	15	15
75-84 years	174	57	61	26	17	19
85 years or over	183	54	57	17	18	21
Men	223	62	66	18	27	21
65-74 years	186	58	63	24	23	16
75-84 years	231	62	66	18	27	21
85 years or over	244	65	67	12	31	24
Women	161	54	58	25	15	18
65-74 years	136	57	61	35	12	14
75-84 years	160	56	60	28	14	18
85 years or over	172	52	55	18	16	20
Black	200	67	73	12	23	39
65-74 years	183	59	59	20	22	17
75-84 years	181	61	72	12	21	39
85 years or over	230	76	83	6	26	50
Men	208	73	81	13	23	44
65-74 years	180	81	81	29	17	35
75-84 years	198	69	83	0	28	55
85 years or over	262	69	77	15	23	38
Women	198	64	71	11	23	37
65-74 years	184	45	45	14	24	7
75-84 years	174	59	69	17	18	34
85 years or over	224	78	84	4	26	53

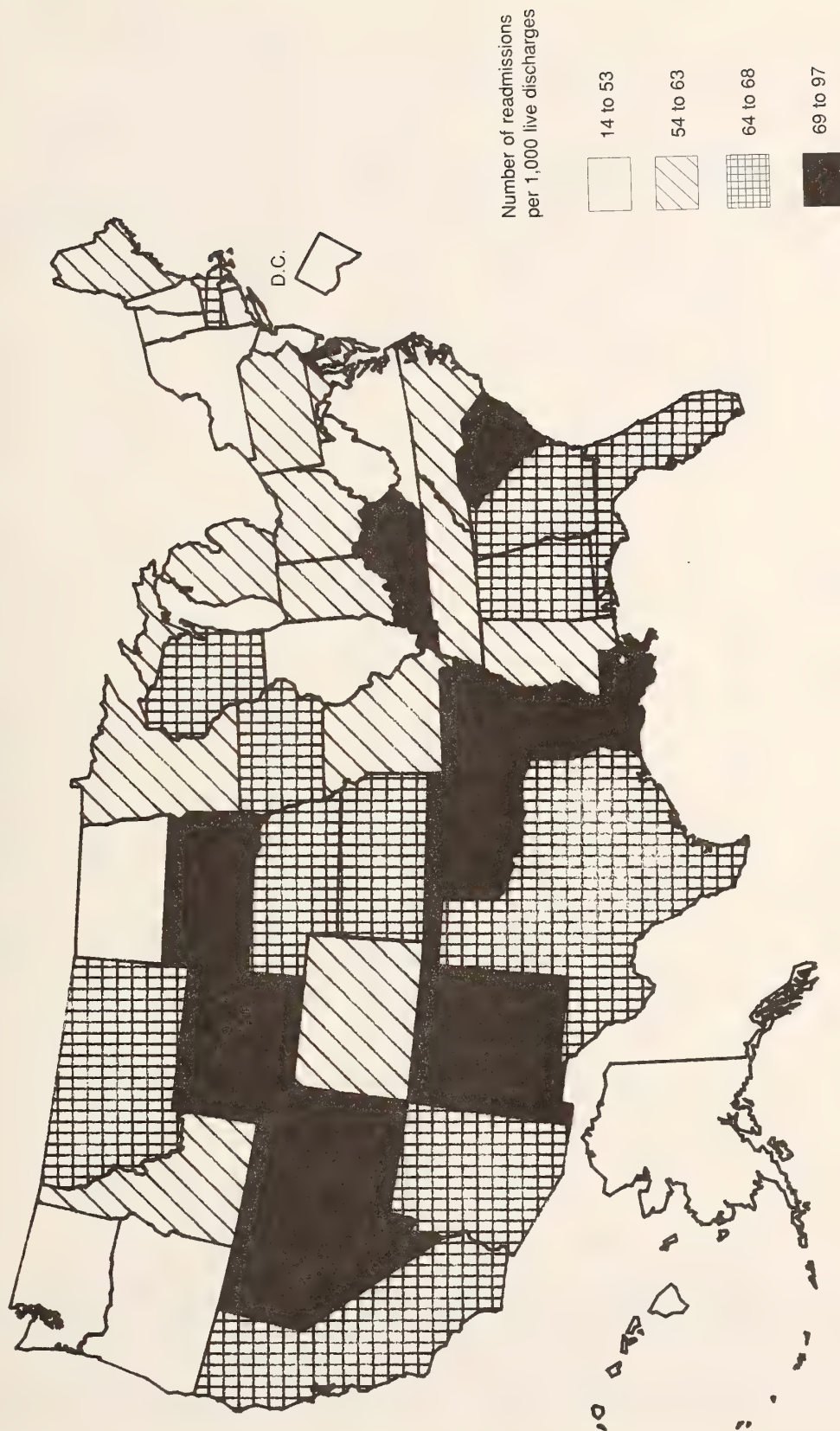
(1)Includes "other events" category.

(2)Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 1a. Reduction of perthrochanteric fracture of the femur: Number of readmissions with an adverse event per 1,000 live discharges for aged Medicare enrollees, by State: 1986 index stays



NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy. Data from the Medicare Statistical System.

Table 3a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
United States	75,101	2.81	14.85	360	223	71,878
Metropolitan	54,497	2.81	15.49	365+	224	52,126
Rural	20,604	2.81	13.14	347--	218	19,752
Northeast	17,005	2.71--	20.02	400++	223	16,107
Metropolitan	15,149	2.72--	20.26	399++	225	14,345
Rural	1,856	2.61--	18.10	402++	209	1,762
New England	4,533	2.89	18.30	380++	223	4,292
Metropolitan	3,935	2.93+	18.71	373	222	3,723
Rural	598	2.64	15.56	425++	231	569
Maine	434	2.83	18.78	435++	263	408
Metropolitan	228	2.77	21.83	412	237	216
Rural	206	2.91	15.41	461++	291+	192
New Hampshire	303	2.64	15.03	436++	172-	291
Metropolitan	208	2.81	15.84	438+	178	202
Rural	95	2.34-	13.25	432	158	89
Vermont	166	2.64	17.36	458+	247	156
Metropolitan	31	2.97	17.45	452	323	28
Rural	135	2.58	17.34	459+	230	128
Massachusetts	2,175	3.07++	19.97	374	222	2,045
Metropolitan	2,041	3.10++	20.26	375	224	1,912
Rural	134	2.66	15.63	351	187	133
Rhode Island	382	2.89	16.90	319	220	361
Metropolitan	382	2.89	16.90	319	220	361
Rural	0	0.00	0.00	0	0	0
Connecticut	1,073	2.70	16.27	364	220	1,031
Metropolitan	1,045	2.72	16.28	366	219	1,004
Rural	28	2.31	15.68	321	250	27
Middle Atlantic	12,472	2.65--	20.65	407++	223	11,815
Metropolitan	11,214	2.66--	20.80	408++	226	10,622
Rural	1,258	2.59--	19.30	392+	199-	1,193
New York	5,769	2.69--	24.53	443++	226	5,410
Metropolitan	5,170	2.69--	24.47	439++	228	4,845
Rural	599	2.71	24.97	484++	212	565
New Jersey	2,331	2.54--	21.87	451++	248++	2,206
Metropolitan	2,331	2.54--	21.87	451++	248++	2,206
Rural	0	0.00	0.00	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious complications related to surgery	General surgical complications
United States	173	56	60	23	17	19
Metropolitan	171	55	58	23	17	19
Rural	180+	61++	65+	25	19	21
Northeast	159--	49--	52--	20--	15-	17-
Metropolitan	159--	48--	51--	19--	15-	16--
Rural	162	57	58	23	16	19
New England	155--	52	55	23	16	16
Metropolitan	159-	53	57	24	17	16
Rural	127--	46	46	12-	14	19
Maine	145	54	54	25	12	17
Metropolitan	167	56	56	37	9	9
Rural	120-	52	52	10	16	26
New Hampshire	151	48	52	14	7	31
Metropolitan	144	50	54	10	5	40
Rural	169	45	45	22	11	11
Vermont	103--	45	45	32	6	6
Metropolitan	71	71	71	71	0	0
Rural	109-	39	39	23	8	8
Massachusetts	172	60	65	23	23	19
Metropolitan	177	61	66	25	24	18
Rural	105-	45	45	0	15	30
Rhode Island	141	14--	14--	6-	6	3-
Metropolitan	141	14--	14--	6-	6	3-
Rural	0	0	0	0	0	0
Connecticut	139--	50	53	28	13	13
Metropolitan	136--	51	54	29	12	13
Rural	222	37	37	0	37	0
Middle Atlantic	161--	48--	50--	19--	15-	17-
Metropolitan	159--	47--	49--	18--	14-	17-
Rural	179	62	65	28	17	19
New York	138--	41--	42--	16--	12--	14--
Metropolitan	137--	40--	41--	14--	13--	14--
Rural	152	48	50	25	11	14
New Jersey	175	50	53	21	15	17
Metropolitan	175	50	53	21	15	17
Rural	0	0	0	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Pennsylvania	4,372	2.65--	14.87	335--	206--	4,199
Metropolitan	3,713	2.68--	15.00	339--	210	3,571
Rural	659	2.49--	14.15	308--	187-	628
North Central	20,583	2.98++	13.21	366+	220	19,703
Metropolitan	12,993	2.95++	13.90	375++	223	12,430
Rural	7,590	3.03++	12.02	352	214	7,273
East North Central	13,400	2.82	13.85	367	221	12,838
Metropolitan	9,600	2.78	14.33	375++	222	9,195
Rural	3,800	2.94++	12.65	347	218	3,643
Ohio	3,432	2.72-	13.43	362	215	3,313
Metropolitan	2,683	2.72	13.78	361	219	2,590
Rural	749	2.71	12.19	364	199	723
Indiana	1,885	3.03++	12.93	306--	232	1,797
Metropolitan	1,190	2.98	12.69	312--	234	1,128
Rural	695	3.11+	13.32	295--	227	669
Illinois	3,828	3.03++	15.22	417++	227	3,660
Metropolitan	2,758	2.89	15.95	437++	220	2,645
Rural	1,070	3.43++	13.33	367	243	1,015
Michigan	2,441	2.48--	13.86	334--	242+	2,327
Metropolitan	1,862	2.50--	14.31	333-	243+	1,776
Rural	579	2.43--	12.41	339	240	551
Wisconsin	1,814	2.97+	12.70	380	182--	1,741
Metropolitan	1,107	3.00+	13.38	397+	188--	1,056
Rural	707	2.92	11.62	355	174--	685
West North Central	7,183	3.33++	12.01	364	217	6,865
Metropolitan	3,393	3.59++	12.70	373	225	3,235
Rural	3,790	3.13++	11.38	357	210	3,630
Minnesota	1,370	3.45++	10.62	343	220	1,322
Metropolitan	693	3.69++	9.99	343	232	670
Rural	677	3.23++	11.28	343	208	652
Iowa	1,277	3.16++	10.40	375	209	1,224
Metropolitan	472	3.45++	11.76	377	222	453
Rural	805	3.01	9.61	374	201	771
Missouri	2,229	3.40++	13.63	390++	226	2,119
Metropolitan	1,406	3.67++	14.38	407++	223	1,338
Rural	823	3.02	12.34	361	231	781

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious complications related to surgery	General surgical complications
Pennsylvania	182	57	60	22	17	21
Metropolitan	178	54	57	20	17	20
Rural	204	75	78	32	22	24
North Central	166--	55	59	23	17	19
Metropolitan	169	51-	55-	20--	16	19
Rural	162--	61	65	28+	19	18
East North Central	163--	52-	57	22	17	18
Metropolitan	166	51-	55-	19-	17	18
Rural	155--	56	61	27	16	18
Ohio	170	56	59	22	21	16
Metropolitan	177	57	61	20	22	18
Rural	147-	54	55	30	17	8--
Indiana	169	58	63	25	23	14
Metropolitan	173	61	64	26	25	13
Rural	161	52	61	24	21	16
Illinois	178	43--	48--	14--	12--	22
Metropolitan	177	41--	45--	10--	13	23
Rural	180	50	56	24	11	22
Michigan	141--	50	54	25	12-	17
Metropolitan	145--	50	55	25	12	17
Rural	129--	49	51	24	11	16
Wisconsin	138--	60	65	30	17	19
Metropolitan	138--	51	53	26	11	16
Rural	139--	74	85+	36	25	23
West North Central	172	59	62	25	18	20
Metropolitan	176	53	55	21	14	20
Rural	169	66+	69	28	22	19
Minnesota	160	55	61	26	23	11--
Metropolitan	167	46	54	19	24	10-
Rural	152	64	67	34	21	12
Iowa	151-	63	67	27	20	20
Metropolitan	172	57	62	33	11	18
Rural	139--	66	70	23	26	21
Missouri	176	57	59	19	15	25
Metropolitan	170	49	49	14--	11-	23
Rural	184	72	76	27	22	27

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Reduction of peritrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
North Dakota	256	3.00	12.72	266--	207	245
Metropolitan	74	3.22	13.35	230--	230	72
Rural	182	2.91	12.47	280-	198	173
South Dakota	278	2.89	11.52	295-	191	267
Metropolitan	58	2.84	13.07	328	190	55
Rural	220	2.90	11.11	286-	191	212
Nebraska	688	3.28++	11.63	388	225	661
Metropolitan	222	3.17	11.65	369	207	212
Rural	466	3.33++	11.62	397	234	449
Kansas	1,085	3.53++	12.51	353	208	1,027
Metropolitan	468	3.78++	12.99	338	233	435
Rural	617	3.35++	12.14	365	190-	592
South	25,149	2.80	14.21	330--	224	24,115
Metropolitan	16,274	2.83	14.50	329--	225	15,604
Rural	8,875	2.75-	13.67	331--	223	8,511
South Atlantic	12,202	2.61--	14.94	328--	225	11,695
Metropolitan	8,790	2.65--	14.93	326--	225	8,426
Rural	3,412	2.52--	14.95	332--	223	3,269
Delaware	165	2.35-	14.76	194--	200	160
Metropolitan	118	2.66	15.35	203--	195	115
Rural	47	1.81--	13.30	170--	213	45
Maryland	1,022	2.34--	17.15	372	219	982
Metropolitan	913	2.31--	17.16	376	218	876
Rural	109	2.63	17.10	339	229	106
Dist. of Columbia	140	2.11--	19.02	343	207	134
Metropolitan	140	2.11--	19.02	343	207	134
Rural	0	0.00	0.00	0	0	0
Virginia	1,472	2.61--	15.39	300--	212	1,408
Metropolitan	919	2.60-	15.53	300--	218	875
Rural	553	2.63	15.15	300--	203	533
West Virginia	694	2.84	16.70	365	205	667
Metropolitan	268	2.95	16.93	325	190	261
Rural	426	2.77	16.55	390	214	406
North Carolina	1,730	2.51--	15.87	373	224	1,655
Metropolitan	892	2.57--	16.20	364	222	859
Rural	838	2.45--	15.51	382	226	796

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
North Dakota	200	53	53	20	16	16
Metropolitan	167	69	69	28	0	42
Rural	214	46	46	17	23	6
South Dakota	213	71	75	49+	15	11
Metropolitan	345++	91	91	73	0	18
Rural	179	66	71	42	19	9
Nebraska	165	61	64	27	15	21
Metropolitan	151	47	47	19	9	19
Rural	171	67	71	31	18	22
Kansas	196	63	66	25	19	21
Metropolitan	202	64	64	23	18	23
Rural	191	63	68	27	20	20
South	190++	61++	65++	24	19	22++
Metropolitan	183++	60+	64+	24	18	22+
Rural	203++	61+	65	23	20	22
South Atlantic	177	58	61	24	16	20
Metropolitan	172	58	61	25	15	20
Rural	190+	58	61	21	19	20
Delaware	175	75	75	25	19	31
Metropolitan	191	96	96	35	26	35
Rural	133	22	22	0	0	22
Maryland	163	61	63	26	11	25
Metropolitan	166	63	65	27	11	26
Rural	142	47	47	19	9	19
Dist. of Columbia	172	22	22	15	7	0
Metropolitan	172	22	22	15	7	0
Rural	0	0	0	0	0	0
Virginia	161	49	52	28	13	11--
Metropolitan	137--	43	46	29	11	6--
Rural	199	58	62	26	15	21
West Virginia	201	48	49	15	18	16
Metropolitan	195	38	38	8	11	19
Rural	204	54	57	20	22	15
North Carolina	160	56	59	25	15	19
Metropolitan	150	57	58	28	14	16
Rural	171	55	59	21	15	23

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
South Carolina	730	2.22--	16.26	312--	215	696
Metropolitan	403	2.16--	15.96	323	218	385
Rural	327	2.30--	16.62	300-	211	311
Georgia	1,651	2.94	13.26	326--	240	1,590
Metropolitan	978	3.12++	13.50	346	235	942
Rural	673	2.71	12.92	299--	247	648
Florida	4,598	2.70--	13.96	312--	231	4,403
Metropolitan	4,159	2.75	14.00	312--	231	3,979
Rural	439	2.30--	13.56	312-	223	424
East South Central	4,933	2.86	14.11	310--	214	4,730
Metropolitan	2,565	2.94+	14.75	301--	208	2,461
Rural	2,368	2.78	13.40	320--	221	2,269
Kentucky	1,241	2.94	13.81	329-	218	1,191
Metropolitan	526	2.87	14.40	314-	203	502
Rural	715	2.99	13.37	340	229	689
Tennessee	1,681	3.05++	13.73	268--	217	1,614
Metropolitan	1,079	3.15++	14.33	256--	226	1,036
Rural	602	2.89	12.63	291--	201	578
Alabama	1,293	2.79	14.81	357	203	1,235
Metropolitan	798	2.83	15.42	351	185--	767
Rural	495	2.73	13.81	368	230	468
Mississippi	718	2.47--	14.25	288--	221	690
Metropolitan	162	2.44	15.38	309	216	156
Rural	556	2.48--	13.93	282--	223	534
West South Central	8,014	3.10++	13.16	345--	230	7,690
Metropolitan	4,919	3.13++	13.61	349	234	4,717
Rural	3,095	3.05++	12.46	340-	224	2,973
Arkansas	891	2.77	12.77	336	214	851
Metropolitan	275	2.72	13.70	345	204	266
Rural	616	2.79	12.36	331	219	585
Louisiana	1,141	2.74	13.53	305--	225	1,101
Metropolitan	779	2.91	14.03	297--	227	752
Rural	362	2.45--	12.46	323	221	349
Oklahoma	1,249	3.30++	12.50	350	238	1,192
Metropolitan	598	3.32++	13.03	355	263+	567
Rural	651	3.28++	12.01	346	215	625

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
South Carolina	191	69	70	29	22	20
Metropolitan	174	60	60	31	16	13
Rural	212	80	84	26	29	29
Georgia	194+	62	64	19	25	20
Metropolitan	190	65	66	22	23	20
Rural	201	57	60	14	26	20
Florida	180	59	64	25	16	23
Metropolitan	179	59	64	24	16	24
Rural	186	54	59	28	14	17
East South Central	202++	57	62	22	18	22
Metropolitan	189+	56	60	20	18	22
Rural	216++	59	64	23	19	22
Kentucky	202+	63	70	25	22	23
Metropolitan	167	52	54	12-	18	24
Rural	226++	71	81	35	25	22
Tennessee	195+	51	56	17	20	19
Metropolitan	192	52	59	17	19	22
Rural	199	48	50	16	21	14
Alabama	199+	64	66	29	19	19
Metropolitan	196	66	70	31	18	21
Rural	205	60	60	26	19	15
Mississippi	226++	51	55	14	9-	32
Metropolitan	205	38	38	13	6	19
Rural	232++	54	60	15	9	36
West South Central	203++	68++	73++	25	22++	26++
Metropolitan	199++	68++	73++	25	22+	27++
Rural	208++	67+	71+	25	22	24
Arkansas	212++	83++	88+	33	24	32
Metropolitan	226+	102+	109+	34	41+	34
Rural	205	75	79	32	15	31
Louisiana	223++	70	79+	20	24	35++
Metropolitan	223++	65	74	17	20	37+
Rural	221+	80	89	26	32	32
Oklahoma	191	66	71	29	22	20
Metropolitan	173	63	67	30	21	16
Rural	208+	69	75	29	22	24

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Texas	4,733	3.22++	13.32	356	232	4,546
Metropolitan	3,267	3.20++	13.60	361	232	3,132
Rural	1,466	3.28++	12.70	344	231	1,414
West	12,364	2.72--	11.76	354	223	11,953
Metropolitan	10,081	2.77	11.97	357	223	9,747
Rural	2,283	2.54--	10.83	343	221	2,206
Mountain	3,514	2.93+	11.79	342-	217	3,387
Metropolitan	2,177	3.02++	12.21	347	213	2,103
Rural	1,337	2.79	11.11	335	224	1,284
Montana	273	2.81	12.66	330	209	262
Metropolitan	66	3.12	14.85	303	182	63
Rural	207	2.72	11.96	338	217	199
Idaho	298	2.71	9.94	376	235	288
Metropolitan	47	2.54	9.77	234-	213	45
Rural	251	2.75	9.98	402	239	243
Wyoming	119	2.81	12.78	353	235	113
Metropolitan	26	2.12	14.54	346	231	26
Rural	93	3.09	12.29	355	237	87
Colorado	893	3.35++	11.42	359	223	860
Metropolitan	705	3.49++	11.82	374	217	682
Rural	188	2.90	9.90	303	245	178
New Mexico	414	3.30++	13.23	273--	188	401
Metropolitan	165	3.20	13.77	261--	218	159
Rural	249	3.38++	12.87	281--	169-	242
Arizona	986	2.83	12.51	356	216	950
Metropolitan	756	2.93	13.02	362	209	728
Rural	230	2.53	10.82	335	239	222
Utah	303	2.36--	9.85	356	241	290
Metropolitan	225	2.41-	9.90	364	240	216
Rural	78	2.21-	9.72	333	244	74
Nevada	228	2.79	10.93	289-	197	223
Metropolitan	187	2.90	11.10	278-	187	184
Rural	41	2.35	10.17	341	244	39

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Texas	199++	64+	68+	23	21	24
Metropolitan	196++	66+	71+	25	21	26+
Rural	207++	60	62	20	23	20
West	171	60	63	28++	18	18
Metropolitan	172	59	63	28++	18	17-
Rural	165	63	65	26	15	24
Mountain	182	62	68	31+	19	18
Metropolitan	185	57	64	31	20	12--
Rural	177	69	74	30	16	27
Montana	160	61	65	27	19	19
Metropolitan	127	48	48	16	32	0
Rural	171	65	70	30	15	25
Idaho	156	56	56	21	21	14
Metropolitan	111	44	44	0	44	0
Rural	165	58	58	25	16	16
Wyoming	212	71	71	18	18	35
Metropolitan	115	38	38	0	38	0
Rural	241	80	80	23	11	46
Colorado	209++	53	59	30	13	16
Metropolitan	221++	50	56	29	13	13
Rural	163	67	73	34	11	28
New Mexico	185	65	70	25	17	27
Metropolitan	170	50	50	19	19	13
Rural	194	74	83	29	17	37
Arizona	169	61	68	34	22	13
Metropolitan	172	60	69	37	21	11-
Rural	162	63	68	23	27	18
Utah	186	83	97	48+	24	24
Metropolitan	181	79	93	46	28	19
Rural	203	95	108	54	14	41
Nevada	166	67	72	36	18	18
Metropolitan	174	60	65	27	22	16
Rural	128	103	103	77	0	26

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Pacific	8,850	2.65--	11.75	359	225	8,566
Metropolitan	7,904	2.71--	11.91	360	226	7,644
Rural	946	2.27--	10.44	353	217	922
Washington	1,278	2.77	10.32	380	228	1,245
Metropolitan	991	2.86	10.57	383	229	967
Rural	287	2.50-	9.46	369	223	278
Oregon	635	2.09--	10.40	335	238	613
Metropolitan	402	2.21--	10.58	338	229	389
Rural	233	1.91--	10.10	330	253	224
California	6,748	2.72--	11.96	356	224	6,526
Metropolitan	6,377	2.74-	12.03	356	226	6,160
Rural	371	2.52-	10.67	361	194	366
Alaska	30	1.84--	15.13	400	233	28
Metropolitan	9	1.60-	18.11	444	222	8
Rural	21	1.96-	13.86	381	238	20
Hawaii	159	1.98--	19.14	403	201	154
Metropolitan	125	2.17--	19.86	440	216	120
Rural	34	1.51--	16.53	265	147	34

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Pacific	166	59	62	26	17	18
Metropolitan	168	59	63	27	18	18
Rural	150-	53	53	20	14	20
Washington	139--	51	51	30	8--	14
Metropolitan	143--	50	51	30	9-	11-
Rural	126-	54	54	29	4	22
Oregon	148	49	51	24	11	15
Metropolitan	134-	46	49	26	10	13
Rural	174	54	54	22	13	18
California	175	62	65	26	20	19
Metropolitan	176	62	66	27	20	19
Rural	158	57	57	14	25	19
Alaska	143	36	36	36	0	0
Metropolitan	125	125	125	125	0	0
Rural	150	0	0	0	0	0
Hawaii	84--	39	39	6	13	19
Metropolitan	83--	42	42	8	17	17
Rural	88	29	29	0	0	29

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
United States	75,101	2.81	14.85	360	223	71,878
Northeast	17,005	2.71--	20.02	400++	223	16,107
New England	4,533	2.89	18.30	380++	223	4,292
Maine	434	2.83	18.78	435++	263	408
Bangor	42	2.62	13.48	333	357	38
Lewiston-Auburn	38	2.82	22.61	342	237	36
Portland	148	2.80	24.00	453+	203	142
New Hampshire	303	2.64	15.03	436++	172-	291
Manchester	127	2.86	16.48	449+	197	123
Portsmouth	81	2.72	14.84	420	148	79
Vermont	166	2.64	17.36	458+	247	156
Burlington	31	2.97	17.45	452	323	28
Massachusetts	2,175	3.07++	19.97	374	222	2,045
Boston	1,435	3.34++	19.44	381	232	1,353
New Bedford	153	2.33-	25.66	366	255	138
Pittsfield	47	2.32	16.87	319	277	42
Springfield	208	2.88	21.35	356	197	188
Worcester	198	2.78	21.65	374	162-	191
Rhode Island	382	2.89	16.90	319	220	361
Providence	382	2.89	16.90	319	220	361
Connecticut	1,073	2.70	16.27	364	220	1,031
Bridgeport	300	3.10	18.51	397	213	289
Hartford	374	2.38--	15.27	361	182-	361
New Haven	284	2.76	16.04	327	239	275
New London	87	3.15	13.75	402	333+	79

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
United States	173	56	60	23	17	19
Northeast	159--	49--	52--	20--	15-	17-
New England	155--	52	55	23	16	16
Maine	145	54	54	25	12	17
Bangor	237	132	132	53	26	53
Lewiston-Auburn	139	28	28	28	0	0
Portland	155	42	42	35	7	0
New Hampshire	151	48	52	14	7	31
Manchester	163	49	57	16	0	41
Portsmouth	114	51	51	0	13	38
Vermont	103--	45	45	32	6	6
Burlington	71	71	71	71	0	0
Massachusetts	172	60	65	23	23	19
Boston	198+	67	72	24	27	21
New Bedford	116-	51	58	36	0	22
Pittsfield	214	119	119	24	71	24
Springfield	90--	21--	27--	11	5	11
Worcester	147	52	63	31	26	5
Rhode Island	141	14--	14--	6-	6	3-
Providence	141	14--	14--	6-	6	3-
Connecticut	139--	50	53	28	13	13
Bridgeport	118--	55	55	38	10	7
Hartford	150	47	50	19	8	22
New Haven	138	40	47	33	7	7
New London	139	89	89	25	51	13

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Middle Atlantic	12,472	2.65--	20.65	407++	223	11,815
New York	5,769	2.69--	24.53	443++	226	5,410
Albany	294	2.55	27.47	480++	207	271
Binghamton	96	2.70	18.79	344	208	92
Buffalo	364	2.71	25.96	407	234	336
Elmira	20	1.46--	33.35	350	200	19
Glens Falls	34	2.23	16.82	294	176	34
Nassau-Suffolk	789	2.66	24.49	478++	253+	731
New York	2,745	2.75	24.20	425++	227	2,579
Niagara Falls	85	2.76	21.76	435	224	84
Orange County	68	2.23-	26.41	456	176	64
Poughkeepsie	66	2.37	21.56	561++	197	62
Rochester	276	2.69	23.91	475++	214	265
Syracuse	200	2.66	27.32	405	195	186
Utica-Rome	133	2.85	23.15	519++	278	122
New Jersey	2,331	2.54--	21.87	451++	248++	2,206
Atlantic City	133	2.87	19.71	466+	218	125
Bergen-Passaic	412	2.41--	22.35	391	262	385
Jersey City	162	2.53	28.56	500++	302+	153
Middlesex	229	2.52	23.80	489++	227	215
Monmouth-Ocean	410	2.65	21.29	412+	261	393
Newark	532	2.52--	21.64	462++	231	505
Trenton	85	2.21-	18.26	729++	200	81
Vineland	29	1.77--	15.31	345	241	28
Pennsylvania	4,372	2.65--	14.87	335--	206--	4,199
Allentown	257	2.71	15.39	358	226	249
Altoona	70	3.38	12.00	443	214	66
Beaver County	67	2.43	11.69	224--	164	67
Erie	95	2.70	13.01	232--	221	91
Harrisburg	179	2.45	14.32	447+	184	172
Johnstown	107	2.66	14.12	364	234	103
Lancaster	142	2.96	13.54	387	176	135
Philadelphia	1,692	2.97+	17.05	358	227	1,616
Pittsburgh	766	2.37--	14.88	312--	196	740
Reading	114	2.35-	12.89	298	158	113
Scranton	297	2.42--	15.21	350	226	286
Sharon	60	3.16	12.32	383	100--	58
State College	30	2.99	13.93	267	200	29
Williamsport	47	2.78	14.19	191--	170	46
York	117	2.41	12.28	376	316+	109

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Middle Atlantic	161--	48--	50--	19--	15-	17-
New York	138--	41--	42--	16--	12--	14--
Albany	151	33-	33-	4-	4	26
Binghamton	120	33	33	22	11	0
Buffalo	119--	27--	27--	15	3-	9
Elmira	105	53	53	53	0	0
Glens Falls	147	59	59	0	59	0
Nassau-Suffolk	134--	41-	41-	11--	19	11-
New York	143--	40--	40--	12--	13	16
Niagara Falls	179	83	83	24	24	36
Orange County	188	63	63	31	16	16
Poughkeepsie	113	32	32	32	0	0
Rochester	113--	57	60	38	19	4
Syracuse	86--	16--	16--	5	5	5
Utica-Rome	131	41	57	41	0	16
New Jersey	175	50	53	21	15	17
Atlantic City	152	64	64	24	16	24
Bergen-Passaic	187	44	47	8-	18	21
Jersey City	163	59	59	20	13	26
Middlesex	149	23--	23--	5	9	9
Monmouth-Ocean	191	36-	38-	18	10	10
Newark	172	63	65	22	18	26
Trenton	210	62	62	37	12	12
Vineland	286	36	36	36	0	0
Pennsylvania	182	57	60	22	17	21
Allentown	157	52	52	16	12	24
Altoona	212	61	61	15	30	15
Beaver County	194	45	45	30	0	15
Erie	154	77	88	22	11	55
Harrisburg	174	64	70	41	23	6
Johnstown	155	39	39	29	10	0
Lancaster	89--	37	37	7	15	15
Philadelphia	194+	58	62	22	24	16
Pittsburgh	173	45	50	19	5--	26
Reading	115	35	35	27	0	9
Scranton	168	52	52	10	24	17
Sharon	172	52	52	17	17	17
State College	103	138	138	69	0	69
Williamsport	152	65	65	22	0	43
York	248	92	92	55	9	28

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
North Central	20,583	2.98++	13.21	366+	220	19,703
East North Central	13,400	2.82	13.85	367	221	12,838
Ohio	3,432	2.72-	13.43	362	215	3,313
Akron	231	3.05	12.55	277--	208	226
Canton	137	2.64	12.66	336	153-	131
Cincinnati	481	3.02	15.06	372	214	462
Cleveland	642	2.65	14.56	341	223	618
Columbus	371	3.06	12.35	399	226	361
Dayton	268	2.59	14.10	425+	246	253
Hamilton	81	3.11	12.75	259-	235	78
Lima	55	2.81	12.47	218-	200	53
Lorain-Elyria	64	2.34	14.42	500+	234	62
Mansfield	44	2.89	13.20	114--	159	44
Steubenville	34	1.55--	13.79	324	265	32
Toledo	176	2.49	13.95	398	261	172
Youngstown	142	2.05--	15.17	387	190	136
Indiana	1,885	3.03++	12.93	306--	232	1,797
Anderson	61	3.55	13.03	377	311	56
Bloomington	32	4.04	11.97	375	156	29
Elkhart-Goshen	47	3.00	12.77	149--	128	47
Evansville	117	3.40	11.78	299	248	112
Fort Wayne	124	3.30	14.56	306	242	119
Gary-Hammond	83	1.36--	14.55	253-	253	81
Indianapolis	436	3.68++	12.52	378	241	415
Kokomo	38	3.50	10.74	158--	211	37
Lafayette	29	2.58	7.79	138--	276	27
Muncie	45	3.27	12.89	311	111-	44
South Bend	77	2.32	11.00	195--	299	71
Terre Haute	68	3.47	14.10	368	235	61
Illinois	3,828	3.03++	15.22	417++	227	3,660
Aurora-Elgin	87	2.81	14.40	276	195	84
Bloomington	47	3.71	14.79	340	255	43
Champaign	43	3.21	11.09	395	326	41
Chicago	1,651	2.71	16.75	446++	224	1,582
Decatur	56	3.50	16.48	304	232	56
Joliet	89	3.17	15.52	517++	169	83
Kankakee	27	2.25	12.44	333	185	27
Lake County	98	2.71	16.41	469+	214	95
Peoria	144	3.31	16.13	417	222	136
Rockford	89	3.14	12.42	539++	270	84
Springfield	102	4.11++	14.68	343	206	99

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
North Central	166--	55	59	23	17	19
East North Central	163--	52-	57	22	17	18
Ohio	170	56	59	22	21	16
Akron	208	53	62	13	31	18
Canton	137	99	107	38	31	38
Cincinnati	197	56	58	13	22	24
Cleveland	175	44	47	13-	18	16
Columbus	163	58	64	19	30	14
Dayton	170	63	63	20	32	12
Hamilton	154	38	51	26	26	0
Lima	57-	19	19	19	0	0
Lorain-Elyria	210	65	65	48	0	16
Mansfield	91	0	0	0	0	0
Steubenville	250	125	125	31	31	63
Toledo	186	70	70	29	12	29
Youngstown	147	66	66	37	7	22
Indiana	169	58	63	25	23	14
Anderson	143	54	54	18	18	18
Bloomington	138	34	34	0	34	0
Elkhart-Goshen	149	43	43	21	21	0
Evansville	116	36	36	9	27	0
Fort Wayne	143	67	76	34	42	0
Gary-Hammond	272+	74	74	12	37	25
Indianapolis	202	70	75	24	27	24
Kokomo	243	54	54	27	0	27
Lafayette	74	0	0	0	0	0
Muncie	114	45	45	23	23	0
South Bend	141	113	113	56	42	14
Terre Haute	148	16	16	16	0	0
Illinois	178	43--	48--	14--	12--	22
Aurora-Elgin	107-	36	36	12	12	12
Bloomington	116	70	70	0	23	47
Champaign	146	49	49	24	24	0
Chicago	186	37--	42--	10--	11-	21
Decatur	232	18	18	0	0	18
Joliet	157	36	48	0	24	24
Kankakee	296	37	74	0	0	74
Lake County	179	53	53	11	21	21
Peoria	184	66	74	15	29	29
Rockford	95-	83	83	24	36	24
Springfield	162	61	71	10	10	51

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Michigan	2,441	2.48--	13.86	334--	242+	2,327
Ann Arbor	55	3.10	13.96	309	218	53
Battle Creek	41	2.44	18.54	537+	390+	39
Benton Harbor	48	2.22	12.02	333	208	46
Detroit	1,092	2.43--	15.34	339	255+	1,030
Flint	101	2.34-	15.27	366	178	96
Grand Rapids	196	3.06	9.27	255--	255	191
Jackson	47	2.76	15.19	255	128	46
Kalamazoo	50	2.32	13.04	160--	180	49
Lansing	87	2.68	13.84	494+	264	85
Muskegon	50	2.64	12.32	260	220	50
Saginaw	95	2.25-	13.12	337	200	91
Wisconsin	1,814	2.97+	12.70	380	182--	1,741
Appleton	103	2.99	14.10	447	126--	100
Eau Claire	44	2.60	12.32	295	250	41
Green Bay	47	2.45	13.34	191--	149	44
Janesville	50	3.02	16.30	300	200	49
Kenosha	42	2.94	14.62	476	238	40
LaCrosse	49	4.13+	12.20	327	265	43
Madison	120	3.90++	10.13	433	133--	118
Milwaukee	503	3.02	13.76	443++	213	479
Racine	49	2.39	15.78	224-	122-	47
Sheboygan	44	3.04	11.68	409	227	42
Wausau	34	2.63	12.79	265	88	33
West North Central	7,183	3.33++	12.01	364	217	6,865
Minnesota	1,370	3.45++	10.62	343	220	1,322
Duluth	84	2.80	11.58	381	226	81
Minneapolis	530	3.74++	9.58	319-	234	512
Rochester	41	4.36+	13.93	415	195	39
St. Cloud	51	4.16+	9.86	490	176	49
Iowa	1,277	3.16++	10.40	375	209	1,224
Cedar Rapids	74	3.83+	9.78	324	230	71
Davenport	146	3.27	10.70	295	199	143
Des Moines	135	3.37	13.16	407	244	126
Dubuque	57	4.97++	10.75	579++	105--	56
Iowa City	22	3.53	15.91	455	273	20
Sioux City	57	3.57	12.53	316	193	56
Waterloo	45	2.31	9.22	222-	222	44

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Michigan	141--	50	54	25	12-	17
Ann Arbor	132	57	57	38	0	19
Battle Creek	256	77	77	0	26	51
Benton Harbor	174	109	130	65	0	65
Detroit	162	50	56	24	16	17
Flint	104-	31	42	42	0	0
Grand Rapids	110--	73	73	47	16	10
Jackson	109	0	0	0	0	0
Kalamazoo	41-	0	0	0	0	0
Lansing	129	47	47	0	12	35
Muskegon	120	40	40	20	0	20
Saginaw	121	33	33	11	11	11
Wisconsin	138--	50	65	30	17	19
Appleton	110--	70	70	40	10	20
Eau Claire	171	49	49	0	24	24
Green Bay	114	23	23	0	0	23
Janesville	82	0	0	0	0	0
Kenosha	175	75	75	0	0	75
LaCrosse	186	93	93	47	23	23
Madison	110-	59	59	34	8	17
Milwaukee	161	50	52	25	13	15
Racine	85	0	0	0	0	0
Sheboygan	71	71	95	71	24	0
Wausau	91	30	30	30	0	0
West North Central	172	59	62	25	18	20
Minnesota	160	55	61	26	23	11--
Duluth	136	37	49	12	37	0
Minneapolis	182	55	63	23	25	14
Rochester	179	0	0	0	0	0
St. Cloud	82	20	20	20	0	0
Iowa	151-	63	67	27	20	20
Cedar Rapids	169	0-	0-	0	0	0
Davenport	175	35	35	21	7	7
Des Moines	214	111+	127++	71++	16	40
Dubuque	161	54	54	18	18	18
Iowa City	200	50	50	0	50	0
Sioux City	125	71	71	54	0	18
Waterloo	136	23	23	23	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Missouri	2,229	3.40++	13.63	390++	226	2,119
Columbia	27	3.15	13.74	407	333	26
Joplin	74	3.84+	14.54	243-	243	69
Kansas City	601	3.88++	14.12	413++	231	561
St. Joseph	51	3.74	15.75	451	392+	43
St. Louis	1,014	3.58++	14.76	411++	201	978
Springfield	81	2.93	15.23	617++	222	79
North Dakota	256	3.00	12.72	266--	207	245
Bismarck	23	2.82	12.61	87-	130	22
Fargo	40	2.83	13.53	300	300	39
Grand Forks	20	3.52	12.90	250	250	20
South Dakota	278	2.89	11.52	295-	191	267
Rapid City	19	2.66	13.11	368	316	17
Sioux Falls	39	2.94	13.05	308	128	38
Nebraska	688	3.28++	11.63	388	225	661
Lincoln	72	3.43	11.36	333	194	69
Omaha	174	3.02	12.16	385	224	166
Kansas	1,085	3.53++	12.51	353	208	1,027
Lawrence	16	3.22	13.88	188	0	16
Topeka	82	4.32++	13.26	183--	280	78
Wichita	165	3.60++	11.25	430	255	152
South	25,149	2.80	14.21	330--	224	24,115
South Atlantic	12,202	2.61--	14.94	328--	225	11,695
Delaware	165	2.35-	14.76	194--	200	160
Wilmington	140	2.41-	15.53	236--	179	137
Maryland	1,022	2.34--	17.15	372	219	982
Baltimore	538	2.20--	17.39	383	221	513
Cumberland	36	2.11-	19.03	444	222	36
Hagerstown	41	2.82	15.66	341	244	41
Dist. of Columbia	140	2.11--	19.02	343	207	134
Washington	629	2.43--	16.79	351	221	600
Virginia	1,472	2.61--	15.39	300--	212	1,408
Charlottesville	38	3.16	12.21	447	211	37
Danville	42	2.70	16.67	381	167	41
Lynchburg	33	1.82--	11.64	242	61-	33
Norfolk	263	2.55	16.52	323	240	247
Richmond	212	2.47-	15.37	255--	226	200
Roanoke	105	3.43	15.03	229--	181	103

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Missouri	176	57	59	19	15	25
Columbia	192	154	154	115+	0	38
Joplin	159	29	29	0	14	14
Kansas City	191	53	53	18	14	21
St. Joseph	163	47	47	23	23	0
St. Louis	169	44	45-	8--	10-	27
Springfield	114	13	13	0	13	0
North Dakota	200	53	53	20	16	16
Bismarck	227	91	91	91	0	0
Fargo	154	77	77	0	26	51
Grand Forks	100	50	50	0	0	50
South Dakota	213	71	75	49+	15	11
Rapid City	353	118	118	118	0	0
Sioux Falls	342+	79	79	53	0	26
Nebraska	165	61	64	27	15	21
Lincoln	101-	29	29	0	14	14
Omaha	151	48	48	24	6	18
Kansas	196	63	66	25	19	21
Lawrence	188	125	125	63	63	0
Topeka	167	38	38	13	0	26
Wichita	257+	86	86	33	20	33
South	190++	61++	65++	24	19	22++
South Atlantic	177	58	61	24	16	20
Delaware	175	75	75	25	19	31
Wilmington	182	88	88	29	29	29
Maryland	163	61	63	26	11	25
Baltimore	166	57	60	29	8	23
Cumberland	111	28	28	28	0	0
Hagerstown	171	146	146	49	49	49
Dist. of Columbia	172	22	22	15	7	0
Washington	147	43	45	23	7--	15
Virginia	161	49	52	28	13	11--
Charlottesville	162	54	54	54	0	0
Danville	146	49	49	24	24	0
Lynchburg	152	61	61	61	0	0
Norfolk	158	28--	32-	8	8	16
Richmond	150	55	55	30	20	5
Roanoke	117	58	58	49	10	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
West Virginia	694	2.84	16.70	365	205	667
Charleston	99	2.89	20.08	343	192	95
Huntington	120	2.93	13.97	267-	183	118
Parkersburg	69	3.47	12.94	348	188	68
Wheeling	72	3.27	16.07	319	181	70
North Carolina	1,730	2.51--	15.87	373	224	1,655
Asheville	63	2.57	14.32	317	222	57
Burlington	34	2.34	16.15	147--	265	34
Charlotte	318	2.91	17.04	308-	217	307
Fayetteville	31	2.32	19.42	516	290	30
Greensboro	224	2.25--	15.68	348	188	217
Hickory	61	2.61	16.82	590++	230	56
Jacksonville	10	1.95	19.20	600	200	10
Raleigh-Durham	160	2.83	15.14	431	269	155
Wilmington	26	2.06	14.27	231	231	26
South Carolina	730	2.22--	16.26	312--	215	696
Anderson	42	2.53	13.81	214-	333	38
Charleston	84	2.45	17.73	310	179	81
Columbia	55	1.56--	16.55	418	164	54
Florence	22	1.97-	13.95	273	91	21
Greenville	131	1.99--	14.61	351	244	127
Georgia	1,651	2.94	13.26	326--	240	1,590
Albany	32	3.44	17.47	313	250	30
Athens	37	2.74	13.30	351	162	36
Atlanta	622	3.28++	12.66	350	235	605
Augusta	95	2.88	17.86	316	179	87
Columbus	65	2.85	14.11	246-	215	63
Macon	76	2.93	16.13	329	237	73
Savannah	56	2.21-	15.11	554++	304	53

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
West Virginia	201	48	49	15	18	16
Charleston	242	32	32	0	11	21
Huntington	178	42	51	25	17	8
Parkersburg	221	88	88	44	29	15
Wheeling	243	14	14	0	0	14
North Carolina	160	56	59	25	15	19
Asheville	70	35	35	18	0	18
Burlington	206	118	118	88	0	29
Charlotte	134-	39	42	23	16	3-
Fayetteville	300	100	100	67	33	0
Greensboro	138	41	41	18	5	18
Hickory	232	89	89	36	0	54
Jacksonville	100	100	100	100	0	0
Raleigh-Durham	155	71	71	19	32	19
Wilmington	115	77	77	38	0	38
South Carolina	191	69	70	29	22	20
Anderson	237	53	53	0	26	26
Charleston	123	62	62	37	12	12
Columbia	241	74	74	74	0	0
Florence	143	143	143	48	0	95
Greenville	181	55	55	16	31	8
Georgia	194+	62	64	19	25	20
Albany	100	33	33	0	33	0
Athens	83	28	28	28	0	0
Atlanta	210+	76	78	26	23	28
Augusta	230	46	46	23	11	11
Columbus	143	48	48	32	16	0
Macon	151	41	41	14	27	0
Savannah	151	0	0	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Florida	4,598	2.70--	13.96	312--	231	4,403
Bradenton	111	2.59	13.26	225--	261	105
Daytona Beach	210	3.35+	13.17	214--	205	203
Fort Lauderdale	491	2.70	14.72	348	210	470
Fort Myers	133	2.17--	12.37	271-	180	132
Fort Pierce	84	2.04--	13.38	202--	202	79
Ft. Walton Beach	29	2.85	11.45	483	345	27
Gainesville	56	3.34	15.36	375	250	53
Jacksonville	249	3.08	13.81	333	261	238
Lakeland	143	2.58	12.34	252--	175	136
Melbourne	112	2.41	15.70	259-	232	110
Miami-Hialeah	557	3.31++	16.19	329	228	538
Naples	40	1.71--	11.45	150--	125	38
Ocala	63	2.01--	15.90	270	286	58
Orlando	258	2.85	13.24	318	256	239
Panama City	16	1.35--	14.56	250	125	14
Pensacola	86	2.87	13.76	465+	302	85
Sarasota	193	2.48	13.81	352	218	186
Tallahassee	51	2.93	12.00	510+	196	49
Tampa	912	2.82	13.81	296--	238	875
West Palm Beach	365	2.61	12.77	340	255	344
East South Central	4,933	2.86	14.11	310--	214	4,730
Kentucky	1,241	2.94	13.81	329-	218	1,191
Lexington	101	3.26	12.42	218--	139-	99
Louisville	273	2.54	14.51	337	216	255
Owensboro	28	2.71	15.54	643++	179	28
Tennessee	1,681	3.05++	13.73	268--	217	1,614
Chattanooga	157	3.14	11.84	229--	242	151
Clarksville	37	2.95	11.59	243	162	36
Jackson	32	3.18	14.56	281	344	31
Johnson City	175	3.18	14.91	246--	246	168
Knoxville	223	3.14	14.30	215--	170-	217
Memphis	248	2.79	16.58	274--	266	232
Nashville	317	3.41++	14.01	287--	218	306
Alabama	1,293	2.79	14.81	357	203	1,235
Anniston	32	2.44	14.38	344	63	31
Birmingham	312	2.87	15.22	378	192	303
Dothan	31	2.44	15.19	355	161	29
Florence	41	2.46	21.73	537+	195	38
Gadsden	50	3.50	14.22	220-	220	50
Huntsville	55	3.21	16.24	273	218	54
Mobile	128	2.53	15.13	289	133--	126
Montgomery	89	2.98	14.92	292	213	84
Tuscaloosa	47	3.45	15.17	489	255	39

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Florida	180	59	64	25	16	23
Bradenton	124	38	38	19	10	10
Daytona Beach	187	74	94	39	15	39
Fort Lauderdale	191	62	68	17	21	30
Fort Myers	152	45	45	30	0	15
Fort Pierce	114	25	25	25	0	0
Ft. Walton Beach	333	74	74	37	0	37
Gainesville	151	38	38	0	19	19
Jacksonville	214	71	76	25	21	29
Lakeland	140	44	44	29	15	0
Melbourne	182	45	55	27	9	18
Miami-Hialeah	190	59	63	17	15	32
Naples	184	79	79	79	0	0
Ocala	207	121	155+	103++	34	17
Orlando	172	59	59	25	17	17
Panama City	143	0	0	0	0	0
Pensacola	176	82	82	35	35	12
Sarasota	134	48	54	27	5	22
Tallahassee	184	41	41	0	41	0
Tampa	194	63	66	23	22	22
West Palm Beach	154	52	61	20	3-	38+
East South Central	202++	57	62	22	18	22
Kentucky	202+	63	70	25	22	23
Lexington	152	51	51	0	20	30
Louisville	169	67	67	27	16	24
Owensboro	71	0	0	0	0	0
Tennessee	195+	51	56	17	20	19
Chattanooga	172	93	93	13	53+	26
Clarksville	250	56	56	0	28	28
Jackson	258	32	32	32	0	0
Johnson City	190	71	77	18	30	30
Knoxville	134	60	69	23	18	28
Memphis	228+	47	60	9	17	34
Nashville	206	39	42	23	16	3-
Alabama	199+	64	66	29	19	19
Anniston	161	129	129	32	65	32
Birmingham	231+	69	76	40	20	17
Dothan	138	34	34	34	0	0
Florence	184	53	53	26	0	26
Gadsden	220	60	80	0	0	80+
Huntsville	185	74	74	19	37	19
Mobile	190	71	71	40	8	24
Montgomery	119	48	48	12	24	12
Tuscaloosa	154	77	77	51	26	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Mississippi	718	2.47--	14.25	288--	221	690
Biloxi-Gulfport	47	2.60	14.40	340	191	46
Jackson	80	2.27-	15.09	325	238	75
Pascagoula	20	2.34	14.30	150	200	20
West South Central	8,014	3.10++	13.16	345--	230	7,690
Arkansas	891	2.77	12.77	336	214	851
Fayetteville	37	3.13	14.89	676++	216	35
Fort Smith	62	2.90	11.95	129--	129-	61
Little Rock	140	2.75	14.66	343	200	136
Pine Bluff	22	2.00	10.05	364	227	21
Louisiana	1,141	2.74	13.53	305--	225	1,101
Alexandria	38	2.75	13.26	263	211	36
Baton Rouge	116	2.93	13.99	379	216	111
Houma-Thibodaux	23	1.70--	11.00	304	348	22
Lafayette	45	3.08	13.40	378	289	44
Lake Charles	40	2.43	15.25	250	225	40
Monroe	42	2.87	9.12	167--	238	41
New Orleans	358	3.02	15.39	296--	237	344
Shreveport	117	3.18	12.35	256-	162	114
Oklahoma	1,249	3.30++	12.50	350	238	1,192
Enid	26	3.16	12.81	462	346	23
Lawton	21	2.55	14.00	238	238	20
Oklahoma City	292	3.29+	12.89	332	274+	277
Tulsa	249	3.51++	13.19	390	249	237

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Mississippi	226++	51	55	14	9-	32
Biloxi-Gulfport	174	65	65	22	22	22
Jackson	227	40	40	13	0	27
Pascagoula	150	0	0	0	0	0
West South Central	203++	68++	73++	25	22++	26++
Arkansas	212++	83++	88+	33	24	32
Fayetteville	229	171+	200+	143++	57	0
Fort Smith	311+	98	98	33	16	49
Little Rock	199	74	81	15	44	22
Pine Bluff	190	95	95	0	0	95
Louisiana	223++	70	79+	20	24	35++
Alexandria	56	0	0	0	0	0
Baton Rouge	216	36	36	36	0	0
Houma-Thibodaux	227	0	0	0	0	0
Lafayette	227	91	91	0	0	91+
Lake Charles	325	150	200++	25	75	100+
Monroe	195	49	49	0	24	24
New Orleans	241++	81	93	23	20	49++
Shreveport	202	44	53	0	35	18
Oklahoma	191	66	71	29	22	20
Enid	43	43	43	0	43	0
Lawton	200	50	50	0	0	50
Oklahoma City	184	54	54	18	22	14
Tulsa	165	80	89	51+	21	17

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Texas	4,733	3.22++	13.32	356	232	4,546
Abilene	66	5.04++	16.05	515+	273	62
Amarillo	72	3.78+	10.82	125--	153	72
Austin	196	4.12++	13.84	337	219	193
Beaumont	115	2.72	11.74	243--	226	108
Brazoria	34	2.72	12.21	382	294	31
Brownsville	57	2.83	12.33	298	298	55
Bryan	22	3.16	14.09	318	318	20
Corpus Christi	99	3.48	13.87	384	202	95
Dallas	562	3.27++	13.16	367	228	541
El Paso	90	2.41	15.66	411	233	87
Fort Worth	308	3.14	13.08	390	227	300
Galveston	46	2.37	15.50	348	130	45
Houston	579	3.08+	15.42	434++	264+	546
Killeen-Temple	57	3.32	9.35	333	193	53
Laredo	27	3.21	22.41	296	370	25
Longview	69	3.36	12.80	391	188	67
Lubbock	63	3.32	16.87	333	238	59
McAllen	77	2.81	12.49	364	169	72
Midland	28	3.80	11.82	500	179	28
Odessa	30	3.26	13.93	300	200	30
San Angelo	30	2.68	12.23	133--	233	29
San Antonio	334	3.09	13.19	350	213	320
Sherman-Denison	51	3.51	12.02	569++	196	50
Texarkana	49	3.20	11.67	184--	306	45
Tyler	60	3.29	12.53	250-	217	57
Victoria	20	2.91	14.40	400	150	20
Waco	78	3.30	10.59	231--	244	76
Wichita Falls	66	4.56++	13.33	242-	364+	63
West	12,364	2.72--	11.76	354	223	11,953
Mountain	3,514	2.93+	11.79	342-	217	3,387
Montana	273	2.81	12.66	330	209	262
Billings	37	3.06	15.14	189--	189	35
Great Falls	29	3.20	14.48	448	172	28
Idaho	298	2.71	9.94	376	235	288
Boise City	47	2.54	9.77	234-	213	45
Wyoming	119	2.81	12.78	353	235	113
Casper	11	2.04	13.36	364	182	11
Cheyenne	15	2.18	15.40	333	267	15

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy; Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious complications related to surgery	General surgical complications
Texas	199++	64+	68+	23	21	24
Abilene	161	16	16	0	0	16
Amarillo	236	56	56	14	42	0
Austin	166	41	41	10	26	5
Beaumont	185	28	28	19	9	0
Brazoria	194	0	0	0	0	0
Brownsville	218	73	73	18	18	36
Bryan	200	0	0	0	0	0
Corpus Christi	189	84	84	53	11	21
Dallas	198	74	81	35	24	22
El Paso	195	34	34	0	11	23
Fort Worth	207	87	97	37	20	40+
Galveston	111	67	89	22	22	44
Houston	187	66	66	20	16	29
Killeen-Temple	189	75	75	0	38	38
Laredo	360	80	80	40	40	0
Longview	164	30	45	30	15	0
Lubbock	237	34	51	34	0	17
McAllen	208	69	69	14	42	14
Midland	250	36	71	36	36	0
Odessa	300	133	133	33	33	67
San Angelo	138	69	69	0	34	34
San Antonio	206	72	78	13	22	44++
Sherman-Denison	220	100	100	60	0	40
Texarkana	222	111	111	22	44	44
Tyler	140	0	0	0	0	0
Victoria	50	150	150	150+	0	0
Waco	250	105	118	26	26	66+
Wichita Falls	159	127	143+	48	63+	32
West	171	60	63	28++	18	18
Mountain	182	62	68	31+	19	18
Montana	160	61	65	27	19	19
Billings	57	57	57	29	29	0
Great Falls	214	36	36	0	36	0
Idaho	156	56	56	21	21	14
Boise City	111	44	44	0	44	0
Wyoming	212	71	71	18	18	35
Casper	182	91	91	0	91	0
Cheyenne	67	0	0	0	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Colorado	893	3.35++	11.42	359	223	860
Boulder-Longmont	44	2.91	11.32	455	205	41
Colorado Springs	90	3.61+	9.13	156--	256	89
Denver	455	3.80++	12.62	411+	209	440
Fort Collins	51	3.38	10.75	451	196	49
Greeley	34	2.93	9.56	382	235	34
Pueblo	31	2.02-	12.84	226	258	29
New Mexico	414	3.30++	13.23	273--	188	401
Albuquerque	101	2.99	13.50	287	218	97
Las Cruces	34	3.63	15.47	206-	294	32
Santa Fe	30	3.55	12.77	233	133	30
Arizona	986	2.83	12.51	356	216	950
Phoenix	544	2.90	13.10	351	206	524
Tucson	212	3.00	12.82	392	217	204
Utah	303	2.36--	9.85	356	241	290
Provo-Orem	33	2.05-	10.55	424	242	31
Salt Lake City	192	2.49	9.79	354	240	185
Nevada	228	2.79	10.93	289-	197	223
Las Vegas	135	2.98	11.35	274-	170	132
Reno	52	2.72	10.46	288	231	52
Pacific	8,850	2.65--	11.75	359	225	8,566
Washington	1,278	2.77	10.32	380	228	1,245
Bellingham	40	2.93	7.63	275	200	40
Bremerton	40	2.59	9.05	225-	150	40
Olympia	37	2.60	8.08	189--	216	36
Richland	23	1.83-	10.22	304	130	23
Seattle	491	3.07	11.90	401	248	474
Spokane	132	3.20	9.97	598++	220	130
Tacoma	140	2.79	8.93	271-	243	136
Vancouver	30	1.76--	10.60	233	100	30
Yakima	58	2.55	9.52	431	241	58
Oregon	635	2.09--	10.40	335	238	613
Eugene	43	1.49--	9.44	512+	209	40
Medford	40	1.97--	9.98	325	275	39
Portland	255	2.57	11.14	361	224	249
Salem	64	1.92--	9.47	141--	234	61

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Colorado	209++	53	59	30	13	16
Boulder-Longmont	73	24	24	0	0	24
Colorado Springs	225	45	56	45	0	11
Denver	255++	52	59	32	16	11
Fort Collins	184	61	61	41	20	0
Greeley	176	88	88	0	29	59
Pueblo	34	0	0	0	0	0
New Mexico	185	65	70	25	17	27
Albuquerque	186	52	52	31	10	10
Las Cruces	188	63	63	0	63	0
Santa Fe	100	33	33	0	0	33
Arizona	169	61	68	34	22	13
Phoenix	170	57	67	34	19	13
Tucson	176	69	74	44	25	5
Utah	186	83	97	48+	24	24
Provo-Orem	258	97	161	129+	0	32
Salt Lake City	168	76	81	32	32	16
Nevada	166	67	72	36	18	18
Las Vegas	197	53	61	23	30	8
Reno	115	77	77	38	0	38
Pacific	166	59	62	26	17	18
Washington	139--	51	51	30	8--	14
Bellingham	75	25	25	25	0	0
Bremerton	100	75	100	100+	0	0
Olympia	83	56	56	0	28	28
Richland	174	174	174	87	43	43
Seattle	160	57	57	32	8	17
Spokane	154	31	31	23	8	0
Tacoma	125	7--	7--	0	7	0
Vancouver	133	67	67	67	0	0
Yakima	121	69	69	34	17	17
Oregon	148	49	51	24	11	15
Eugene	150	100	100	50	0	50
Medford	256	51	51	26	0	26
Portland	112--	40	44	24	16	4
Salem	131	33	33	16	0	16

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
California	6,748	2.72--	11.96	356	224	6,526
Anaheim-Santa Ana	441	2.64	11.82	465++	231	434
Bakersfield	95	2.11--	15.53	442	189	92
Chico	65	2.40	11.22	354	277	63
Fresno	153	2.62	10.99	288-	144--	151
Los Angeles	1,894	2.79	12.64	347	228	1,836
Merced	32	2.38	10.88	188-	250	30
Modesto	95	2.83	14.67	432	189	90
Oakland	520	2.76	11.83	344	248	495
Oxnard-Ventura	133	2.69	12.32	421	233	125
Redding	38	2.14	14.53	316	158	35
Riverside	594	2.92	11.92	416++	268+	572
Sacramento	331	2.75	12.05	260--	178-	323
Salinas	68	2.33	9.28	279	191	67
San Diego	585	2.85	11.32	333	225	562
San Francisco	449	2.74	12.14	350	234	427
San Jose	280	2.66	11.50	375	193	271
Santa Barbara	102	2.68	12.75	284	167	98
Santa Cruz	67	2.72	9.46	179--	149	65
Santa Rosa	125	2.79	10.06	336	272	121
Stockton	120	2.94	10.85	367	242	116
Vallejo	101	2.82	12.15	426	238	99
Visalia	60	2.08--	9.90	333	217	60
Yuba City	28	2.37	10.96	179-	321	28
Alaska	30	1.84--	15.13	400	233	28
Anchorage	9	1.60-	18.11	444	222	8
Hawaii	159	1.98--	19.14	403	201	154
Honolulu	125	2.17--	19.86	440	216	120

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Reduction of pertrochanteric fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
California	175	62	65	26	20	19
Anaheim-Santa Ana	184	62	67	23	23	21
Bakersfield	239	120+	141++	33	98++	11
Chico	254	95	95	32	32	32
Fresno	152	86	86	40	33	13
Los Angeles	196+	80++	83++	41++	19	24
Merced	200	33	33	33	0	0
Modesto	111	11	11	0	11	0
Oakland	196	65	67	14	36++	16
Oxnard-Ventura	136	80	80	48	16	16
Redding	143	29	29	29	0	0
Riverside	170	35--	35--	12-	12	10-
Sacramento	130-	40	46	25	6	15
Salinas	134	30	45	30	15	0
San Diego	178	50	53	12-	18	23
San Francisco	171	52	63	28	9	26
San Jose	129-	59	63	7	28	30
Santa Barbara	194	41	41	31	0	10
Santa Cruz	154	77	77	62	15	0
Santa Rosa	132	50	50	25	25	0
Stockton	138	60	60	26	26	9
Vallejo	141	30	40	20	0	20
Visalia	217	100	100	50	33	17
Yuba City	214	71	71	0	0	71
Alaska	143	36	36	36	0	0
Anchorage	125	125	125	125	0	0
Hawaii	84--	39	39	6	13	19
Honolulu	83--	42	42	8	17	17

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1b. Reduction of transcervical fracture of the femur: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986 index stays (Number of procedures: 19,719. Number of live discharges: 19,058. Reduction of transcervical fracture of the femur must include ICD-9-CM principal procedure code 79.15 or 79.35 and principal diagnosis code 820.0 or 820.8. Stays are excluded if the following diagnosis codes are in any position: 733.42, 733.40, or 140-208.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmis- sions within(1)		
Total	--	--	--	342.31	96.55
1. Replacement of the head of the femur (with or without use of methyl methacrylate)	81.61, 81.62	No	1 year	--	25.76
2. Other noninfectious problems related to the hip(2)	--	--	--	0.91	41.66
Mechanical complication of internal orthopedic device, implant, and graft--early	996.4	No	90 days	--	7.56
Mechanical complication of internal orthopedic device, implant, and graft--late	996.4	No	91 days- 1 year	--	11.12
Other complications of internal prosthetic device, implant, and graft	996.7	Yes(3)	30 days	0.91	0.58
Aseptic necrosis of head and neck of femur	733.42	No	1 year	--	10.76
Aseptic necrosis of bone, site unspecified	733.40	No	1 year	--	0.47
Malunion of fracture	733.81	No	1 year	--	0.68
Nonunion of fracture	733.82	No	91 days- 1 year	--	9.81
Dislocation of hip	835	No	1 year	--	0.68

(1)Measured from date of surgery to date of readmission.

(2)For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3)Included only if procedure code 81.6 is not present.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1b. Reduction of transcervical fracture of the femur: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986 index stays (Number of procedures: 19,719. Number of live discharges: 19,058. Reduction of transcervical fracture of the femur must include ICD-9-CM principal procedure code 79.15 or 79.35 and principal diagnosis code 820.0 or 820.8. Stays are excluded if the following diagnosis codes are in any position: 733.42, 733.40, or 140-208.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmissions within(1)		
3. Infectious complications related to surgery(2)	--	--	--	168.37	14.01
Other bacterial pneumonia	482	Yes	30 days	4.51	1.36
Bronchopneumonia, organism unspecified	485	Yes	30 days	1.47	0.47
Pneumonia, organism unspecified	486	Yes	30 days	17.34	2.52
Respiratory complications	997.3	Yes	30 days	10.35	0.16
Postoperative infection	998.5	Yes	30 days	5.07	1.05
Acute cystitis	595.0	Yes	30 days	1.47	0.21
Cystitis, unspecified	595.9	Yes	30 days	3.25	0.16
Urinary tract infection, site not specified	599.0	Yes	30 days	118.01	2.57
Acute pyelonephritis	590.1	Yes	30 days	0.30	0.42
Other pyelonephritis or pyonephrosis, not specified as acute or chronic	590.8	Yes	30 days	0.35	0.00
Infection of kidney, unspecified	590.9	Yes	30 days	0.00	0.00
Septicemia	038	Yes	30 days	4.77	1.94
Other cellulitis and abscess, unspecified site	682.9	Yes	30 days	0.10	0.00
Other cellulitis and abscess, leg, except foot	682.6	Yes	30 days	0.41	0.00
Other infection	999.3	Yes	30 days	0.20	0.00
Infection and inflammatory reaction due to internal prosthetic device, implant, and graft	996.6	No	1 year	--	3.10
Disruption of operation wound	998.3	Yes	21 days	0.76	0.05

(1) Measured from date of surgery to date of readmission.

(2) For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3) Included only if procedure code 81.6 is not present.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1b. Reduction of transcervical fracture of the femur: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986 index stays (Number of procedures: 19,719. Number of live discharges: 19,058. Reduction of transcervical fracture of the femur must include ICD-9-CM principal procedure code 79.15 or 79.35 and principal diagnosis code 820.0 or 820.8. Stays are excluded if the following diagnosis codes are in any position: 733.42, 733.40, or 140-208.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmissions within(1)		
4. General surgical complications(2)	--	--	--	172.98	15.11
Peripheral vascular complications	997.2	Yes	30 days	2.43	0.37
Acute reaction to foreign substance accidentally left during a procedure	998.7	Yes	1 year	0.00	0.00
Acute edema of lung, unspecified	518.4	Yes	30 days	0.66	0.21
Pulmonary insufficiency following trauma and surgery	518.5	Yes	30 days	1.62	0.00
Retention of urine	788.2	Yes	30 days	11.82	0.26
Incontinence of urine	788.3	Yes	30 days	4.61	0.00
Other vascular complications	999.2	Yes	30 days	0.56	0.00
Foreign body accidentally left during a procedure	998.4	Yes	1 year	0.05	0.00
Other specified complications of procedures, not elsewhere classified	998.8	Yes	30 days	6.64	0.10
Unspecified complication of procedure, not elsewhere classified	998.9	Yes	30 days	0.10	0.00
Postoperative shock	998.0	Yes	30 days	0.41	0.05
Accidental puncture or laceration during a procedure	998.2	Yes	30 days	0.15	0.00
Hemorrhage or hematoma complicating a procedure	998.1	Yes	30 days	5.38	0.47
Iron deficiency anemia, unspecified	280.9	Yes	30 days	7.10	0.00
Trigonitis	595.3	Yes	30 days	0.05	0.00
Pulmonary embolism and infarction	415.1	Yes	30 days	8.57	2.20
Phlebitis and thrombophlebitis	451	Yes	30 days	3.14	0.84
Other venous embolism and thrombosis	453	Yes	30 days	1.42	1.26
Acute myocardial infarction	410	Yes	30 days	8.22	1.10
Acute, but ill-defined, cerebrovascular disease	436	Yes	30 days	5.98	0.73
Decubitus ulcer	707.0	Yes	180 days	10.60	3.88
Iron deficiency anemia, secondary to inadequate dietary iron intake	280.1	Yes	30 days	0.10	0.00
Acute posthemorrhagic anemia	285.1	Yes	30 days	23.38	0.00
Congestive heart failure	428.0	Yes	30 days	64.76	2.15
Subarachnoid hemorrhage	430	Yes	30 days	0.05	0.00
Intracerebral hemorrhage	431	Yes	30 days	0.46	0.16
Other and unspecified intracranial hemorrhage	432	Yes	30 days	0.15	0.10
Occlusion of cerebral arteries	434	Yes	30 days	4.56	1.21

(1)Measured from date of surgery to date of readmission.

(2)For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3)Included only if procedure code 81.6 is not present.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1b. Reduction of transcervical fracture of the femur: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986 index stays (Number of procedures: 19,719. Number of live discharges: 19,058. Reduction of transcervical fracture of the femur must include ICD-9-CM principal procedure code 79.15 or 79.35 and principal diagnosis code 820.0 or 820.8. Stays are excluded if the following diagnosis codes are in any position: 733.42, 733.40, or 140-208.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmis- sions within(1)		
5. Other events(2)	--	--	--	--	--
Mononeuritis of lower limb (lesion of sciatic nerve)	355.0	Yes	7 days	0.05	0.00

(1) Measured from date of surgery to date of readmission.

(2) For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3) Included only if procedure code 81.6 is not present.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986 index stays

Race, sex, and age	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
All persons(2)	19,719	0.74	13.09	278	195	19,058
65-74 years	5,089	0.31	11.97	197	98	5,000
75-84 years	8,337	1.04	13.15	273	179	8,098
85 years or over	6,293	2.50	13.93	350	294	5,960
Men	4,076	0.38	13.75	286	304	3,821
65-74 years	1,203	0.17	12.89	203	162	1,167
75-84 years	1,741	0.60	13.97	290	311	1,636
85 years or over	1,132	1.66	14.32	367	443	1,018
Women	15,643	0.97	12.92	276	166	15,237
65-74 years	3,886	0.43	11.69	195	79	3,833
75-84 years	6,596	1.29	12.93	269	144	6,462
85 years or over	5,161	2.81	13.84	346	261	4,942
White	18,426	0.78	13.00	277	193	17,815
65-74 years	4,739	0.33	11.90	196	96	4,659
75-84 years	7,819	1.10	13.05	271	178	7,596
85 years or over	5,868	2.63	13.83	351	293	5,560
Men	3,775	0.40	13.60	285	307	3,537
65-74 years	1,107	0.18	12.67	201	162	1,073
75-84 years	1,608	0.62	13.73	284	313	1,512
85 years or over	1,060	1.77	14.36	374	449	952
Women	14,651	1.03	12.85	275	164	14,278
65-74 years	3,632	0.45	11.66	194	76	3,586
75-84 years	6,211	1.36	12.87	268	143	6,084
85 years or over	4,808	2.95	13.72	346	258	4,608
Black	679	0.34	15.70	317	246	648
65-74 years	178	0.15	15.03	247	185	170
75-84 years	256	0.44	15.75	320	207	247
85 years or over	245	1.25	16.13	363	331	231
Men	185	0.23	16.91	314	276	173
65-74 years	70	0.13	17.14	243	186	58
75-84 years	71	0.33	18.80	380	282	55
85 years or over	44	0.76	13.50	318	409	40
Women	494	0.41	15.24	318	235	475
65-74 years	108	0.16	13.66	250	185	102
75-84 years	185	0.50	14.57	297	178	182
85 years or over	201	1.46	16.70	373	313	191

(1)Includes "other events" category.

(2)Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986 index stays

Race, sex, and age	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Replacement of the head of the femur	Other non-infectious problems related to the hip	Infectious complications related to surgery	General surgical complications
All persons(2)	172	89	97	26	42	14	15
65-74 years	145	97	107	25	59	11	13
75-84 years	182	95	103	29	42	16	16
85 years or over	183	73	79	22	27	15	15
Men	226	90	98	19	38	24	17
65-74 years	187	91	100	21	48	16	15
75-84 years	245	97	105	21	37	29	18
85 years or over	242	80	85	14	28	25	20
Women	159	88	96	27	43	11	15
65-74 years	133	99	110	27	62	9	12
75-84 years	165	94	102	30	44	12	16
85 years or over	171	72	77	24	26	13	14
White	170	89	96	26	42	14	14
65-74 years	144	98	109	26	59	11	13
75-84 years	178	95	102	29	43	15	16
85 years or over	179	73	78	22	27	15	14
Men	225	90	98	20	38	25	16
65-74 years	185	93	103	22	50	17	14
75-84 years	242	97	104	21	36	30	17
85 years or over	243	78	82	14	26	25	17
Women	156	88	96	28	43	11	14
65-74 years	131	100	110	27	62	9	13
75-84 years	163	95	102	31	44	12	15
85 years or over	166	72	77	24	27	13	13
Black	233	82	88	9	29	14	35
65-74 years	218	88	88	18	47	6	18
75-84 years	251	77	89	8	20	20	40
85 years or over	225	82	87	4	26	13	43
Men	266	92	104	17	35	17	35
65-74 years	221	74	74	15	29	0	29
75-84 years	338	108	123	31	31	31	31
85 years or over	225	100	125	0	50	25	50
Women	221	78	82	6	27	13	36
65-74 years	216	98	98	20	59	10	10
75-84 years	220	66	77	0	16	16	44
85 years or over	225	79	79	5	21	10	42

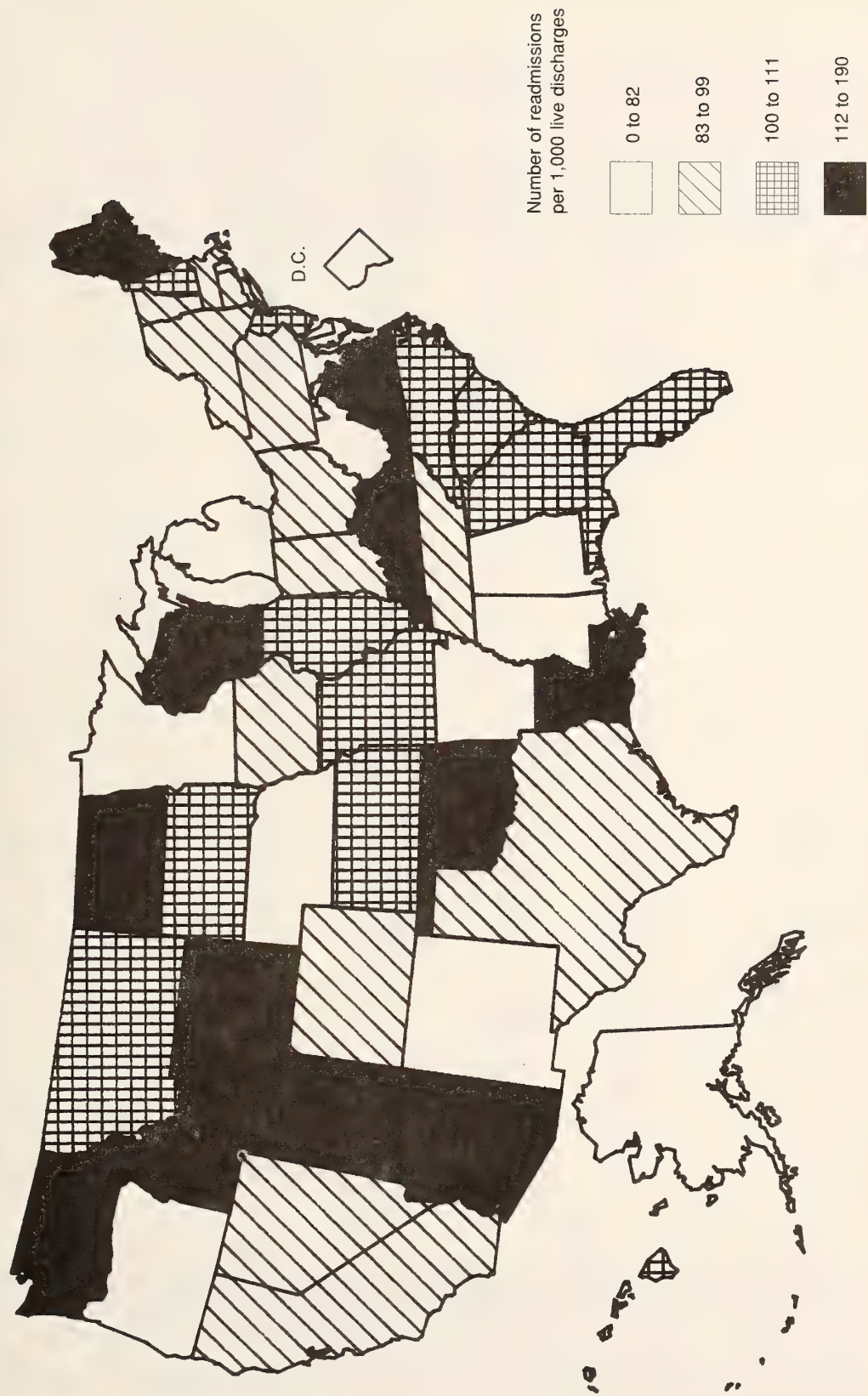
(1)Includes "other events" category.

(2)Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 1b. Reduction of transcervical fracture of the femur: Number of readmissions with an adverse event per 1,000 live discharges for aged Medicare enrollees, by State: 1986 index stays



NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
United States	19,719	0.74	13.09	278	195	19,058
Metropolitan	14,249	0.74	13.58	281	195	13,773
Rural	5,470	0.75	11.82	271	194	5,285
Northeast	4,310	0.69--	17.64	313++	187	4,152
Metropolitan	3,820	0.69--	17.77	310++	191	3,676
Rural	490	0.69	16.60	333+	159-	476
New England	1,166	0.74	15.43	277	190	1,141
Metropolitan	1,012	0.75	15.83	269	195	990
Rural	154	0.68	12.80	331	162	151
Maine	99	0.65	13.94	364	202	97
Metropolitan	53	0.64	15.28	302	208	51
Rural	46	0.65	12.39	435+	196	46
New Hampshire	99	0.86	13.19	273	172	99
Metropolitan	68	0.92	14.04	309	176	68
Rural	31	0.76	11.32	194	161	31
Vermont	48	0.76	16.17	333	229	48
Metropolitan	13	1.25	28.46	308	462	13
Rural	35	0.67	11.60	343	143	35
Massachusetts	506	0.71	17.67	271	194	488
Metropolitan	484	0.73	17.74	267	198	468
Rural	22	0.44--	16.05	364	91	20
Rhode Island	95	0.72	15.78	253	221	94
Metropolitan	95	0.72	15.78	253	221	94
Rural	0	0.00	0.00	0	0	0
Connecticut	319	0.80	12.81	260	172	315
Metropolitan	299	0.78	12.69	261	171	296
Rural	20	1.65++	14.55	250	200	19
Middle Atlantic	3,144	0.67--	18.46	326++	186	3,011
Metropolitan	2,808	0.67--	18.47	325++	189	2,686
Rural	336	0.69	18.35	333+	158	325
New York	1,466	0.68--	22.38	360++	184	1,398
Metropolitan	1,306	0.68--	22.13	354++	182	1,246
Rural	160	0.72	24.37	413++	200	152
New Jersey	616	0.67-	17.28	325+	201	588
Metropolitan	616	0.67-	17.28	325+	201	588
Rural	0	0.00	0.00	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Replacement of the head of the femur	Other non-infectious problems related to the hip	Infectious complications related to surgery	General surgical complications
United States	172	89	97	26	42	14	15
Metropolitan	167	89	95	27	41	13	15
Rural	186+	89	99	24	43	16	16
Northeast	148--	84	91	28	38	10--	15
Metropolitan	147--	84	89	28	36	10-	15
Rural	158	90	103	27	53	11	13
New England	147-	84	89	31	32	11	15
Metropolitan	140--	83	87	32	29-	11	14
Rural	192	93	106	20	53	13	20
Maine	175	124	134	41	72	10	10
Metropolitan	137	118	118	59	39	0	20
Rural	217	130	152	22	109	22	0
New Hampshire	192	111	111	20	51	20	20
Metropolitan	162	88	88	15	44	15	15
Rural	258	161	161	32	65	32	32
Vermont	188	63	83	42	21	0	21
Metropolitan	231	77	77	77	0	0	0
Rural	171	57	86	29	29	0	29
Massachusetts	137-	86	88	33	23--	14	18
Metropolitan	141	90	92	34	24-	15	19
Rural	50	0	0	0	0	0	0
Rhode Island	223	32	32-	0	0-	21	11
Metropolitan	223	32	32-	0	0-	21	11
Rural	0	0	0	0	0	0	0
Connecticut	111--	79	89	35	41	3	10
Metropolitan	105--	81	91	37	44	3	7
Rural	211	53	53	0	0	0	53
Middle Atlantic	148--	84	91	27	40	9--	15
Metropolitan	149--	84	90	26	39	9-	16
Rural	142	89	102	31	52	9	9
New York	127--	79	86	24	42	7--	12
Metropolitan	127--	79	87	25	41	8-	13
Rural	132	72	79	20	53	0	7
New Jersey	158	94	100	20	46	10	24
Metropolitan	158	94	100	20	46	10	24
Rural	0	0	0	0	0	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Pennsylvania	1,062	0.64--	13.73	281	180	1,025
Metropolitan	886	0.64--	13.91	284	192	852
Rural	176	0.66	12.87	261	119--	173
North Central	4,816	0.70--	11.88	284	199	4,656
Metropolitan	3,080	0.70--	12.49	283	196	2,977
Rural	1,736	0.69--	10.80	286	203	1,679
East North Central	3,246	0.68--	12.35	287	203	3,142
Metropolitan	2,301	0.67--	12.85	289	203	2,229
Rural	945	0.73	11.16	281	202	913
Ohio	908	0.72	12.15	291	207	878
Metropolitan	679	0.69	12.20	274	205	659
Rural	229	0.83	12.03	341+	214	219
Indiana	561	0.90++	11.02	246	209	541
Metropolitan	363	0.91++	11.40	267	215	349
Rural	198	0.89+	10.31	207-	197	192
Illinois	804	0.64--	13.66	306	211	780
Metropolitan	573	0.60--	14.54	330++	211	556
Rural	231	0.74	11.48	247	212	224
Michigan	624	0.64--	12.61	285	197	609
Metropolitan	469	0.63--	13.14	275	188	458
Rural	155	0.65	10.99	316	226	151
Wisconsin	349	0.57--	11.56	301	175	334
Metropolitan	217	0.59--	12.16	295	194	207
Rural	132	0.55--	10.57	311	144	127
West North Central	1,570	0.73	10.91	278	189	1,514
Metropolitan	779	0.82++	11.46	266	175	748
Rural	791	0.65--	10.37	291	204	766
Minnesota	316	0.80	9.58	285	187	304
Metropolitan	178	0.95++	8.92	275	157	169
Rural	138	0.66	10.43	297	225	135
Iowa	317	0.78	9.69	271	180	308
Metropolitan	143	1.05++	10.71	273	182	138
Rural	174	0.65	8.86	270	178	170
Missouri	488	0.74	12.28	275	205	469
Metropolitan	297	0.77	12.99	273	199	284
Rural	191	0.70	11.17	277	215	185

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Replacement of the head of the femur	Other non-infectious problems related to the hip	Infectious complications related to surgery	General surgical complications
Pennsylvania	172	87	94	34	34	12	14
Metropolitan	176	83	88	33	31	11	14
Rural	150	104	121	40	52	17	12
North Central	174	88	95	24	44	12	15
Metropolitan	171	87	93	22	45	12	14
Rural	180	90	98	27	43	12	16
East North Central	172	89	96	25	42	14	15
Metropolitan	171	92	99	24	45	15	15
Rural	172	81	90	28	35	12	14
Ohio	151	92	99	26	50	9	14
Metropolitan	153	100	106	26	53	11	17
Rural	146	68	78	27	41	5	5
Indiana	185	85	92	26	43	15	9
Metropolitan	198	86	92	26	37	20	9
Rural	161	83	94	26	52	5	10
Illinois	188	96	108	26	42	21	19
Metropolitan	189	103	117	25	52	22	18
Rural	188	80	85	27	18	18	22
Michigan	158	66-	69-	18	30	10	11
Metropolitan	155	68	70	17	31	9	13
Rural	166	60	66	20	26	13	7
Wisconsin	189	111	120	36	42	18	24
Metropolitan	174	101	106	29	43	14	19
Rural	213	126	142	47	39	24	31
West North Central	180	86	92	20	49	8--	15
Metropolitan	171	71	76	16-	44	4--	12
Rural	189	101	108	25	54	12	18
Minnesota	132-	66	69	20	39	3	7
Metropolitan	124	41--	41--	12	18	0	12
Rural	141	96	104	30	67	7	0
Iowa	136	88	91	13	49	16	13
Metropolitan	152	87	94	22	65	7	0
Rural	124	88	88	6	35	24	24
Missouri	217+	90	102	15	55	11	21
Metropolitan	211	70	81	11	46	7	18
Rural	227	119	135	22	70	16	27

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
North Dakota	47	0.55-	10.81	191	128	45
Metropolitan	9	0.39--	12.78	111	0	9
Rural	38	0.61	10.34	211	158	36
South Dakota	57	0.59	10.02	281	140	55
Metropolitan	8	0.39-	9.38	0	0	8
Rural	49	0.65	10.12	327	163	47
Nebraska	111	0.53--	11.23	315	225	105
Metropolitan	44	0.63	12.66	318	227	42
Rural	67	0.48--	10.30	313	224	63
Kansas	234	0.76	11.59	286	179	228
Metropolitan	100	0.81	12.00	230	130	98
Rural	134	0.73	11.28	328	216	130
South	6,962	0.78++	12.58	257--	200	6,721
Metropolitan	4,361	0.76	12.83	257--	203	4,219
Rural	2,601	0.81++	12.17	255--	195	2,502
South Atlantic	3,475	0.74	12.76	247--	209+	3,357
Metropolitan	2,464	0.74	12.78	247--	214+	2,383
Rural	1,011	0.75	12.70	247-	198	974
Delaware	57	0.81	11.98	175-	281	56
Metropolitan	40	0.90	13.33	250	300	39
Rural	17	0.66	8.82	0-	235	17
Maryland	273	0.63--	13.74	267	223	260
Metropolitan	242	0.61--	13.89	289	215	233
Rural	31	0.75	12.58	97	290	27
Dist. of Columbia	23	0.35--	13.52	174	217	23
Metropolitan	23	0.35--	13.52	174	217	23
Rural	0	0.00	0.00	0	0	0
Virginia	355	0.63--	13.75	225-	220	338
Metropolitan	216	0.61--	13.54	218-	241	205
Rural	139	0.66	14.09	237	187	133
West Virginia	236	0.97++	13.47	246	208	225
Metropolitan	84	0.93	14.14	262	226	80
Rural	152	0.99++	13.10	237	197	145
North Carolina	395	0.57--	12.49	289	182	384
Metropolitan	175	0.50--	12.66	269	171	171
Rural	220	0.64-	12.35	305	191	213

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Replace- ment of the head of the femur	Other non- infectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
North Dakota	222	133	156	22	89	0	44
Metropolitan	222	111	111	0	111	0	0
Rural	222	139	167	28	83	0	56
South Dakota	218	109	109	18	73	0	18
Metropolitan	125	125	125	0	125	0	0
Rural	234	106	106	21	64	0	21
Nebraska	133	57	57	29	19	0	10
Metropolitan	119	48	48	24	24	0	0
Rural	143	63	63	32	16	0	16
Kansas	232+	101	105	39	48	4	13
Metropolitan	184	102	102	31	51	0	20
Rural	269+	100	108	46	46	8	8
South	188++	91	99	26	38	18+	17
Metropolitan	181	92	98	28	39	15	16
Rural	199++	89	100	22	37	21+	19
South Atlantic	174	90	98	24	40	15	19
Metropolitan	170	91	99	25	40	13	20
Rural	183	88	97	23	38	21	15
Delaware	107	36	54	0	54	0	0
Metropolitan	77	26	26	0	26	0	0
Rural	176	59	118	0	118	0	0
Maryland	177	58-	62-	19	19-	4	19
Metropolitan	167	56-	60-	17	17	4	21
Rural	259	74	74	37	37	0	0
Dist. of Columbia	43	0	0	0	0	0	0
Metropolitan	43	0	0	0	0	0	0
Rural	0	0	0	0	0	0	0
Virginia	216	104	118	18	53	21	27
Metropolitan	220	112	122	24	54	15	29
Rural	211	90	113	8	53	30	23
West Virginia	182	71	71	4-	31	27	9
Metropolitan	150	50	50	0	50	0	0
Rural	200	83	83	7	21	41+	14
North Carolina	130-	96	102	36	42	10	13
Metropolitan	117-	105	111	47	47	6	12
Rural	141	89	94	28	38	14	14

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
South Carolina	192	0.58--	14.37	260	193	188
Metropolitan	112	0.60-	14.78	250	205	111
Rural	80	0.56--	13.80	275	175	77
Georgia	517	0.92++	11.68	238-	205	498
Metropolitan	285	0.91++	11.39	242	218	273
Rural	232	0.93++	12.04	233	190	225
Florida	1,427	0.84++	12.47	243--	213	1,385
Metropolitan	1,287	0.85++	12.47	242--	212	1,248
Rural	140	0.73	12.39	250	221	137
East South Central	1,549	0.90++	12.99	262	198	1,488
Metropolitan	772	0.88++	13.59	254	201	743
Rural	777	0.91++	12.39	270	194	745
Kentucky	371	0.88++	12.70	245	164	358
Metropolitan	148	0.81	13.38	243	182	141
Rural	223	0.93++	12.24	247	152	217
Tennessee	577	1.05++	12.27	218--	198	551
Metropolitan	355	1.04++	13.01	225-	197	341
Rural	222	1.07++	11.10	207--	198	210
Alabama	352	0.76	13.63	330+	205	342
Metropolitan	216	0.77	14.06	315	199	211
Rural	136	0.75	12.96	353	213	131
Mississippi	249	0.86+	14.19	293	237	237
Metropolitan	53	0.80	16.25	226	283	50
Rural	196	0.88+	13.63	311	224	187
West South Central	1,938	0.75	11.95	269	186	1,876
Metropolitan	1,125	0.72	12.43	282	181	1,093
Rural	813	0.80+	11.29	251	192	783
Arkansas	351	1.09++	12.00	279	182	337
Metropolitan	102	1.01++	12.62	392+	167	97
Rural	249	1.13++	11.74	233	189	240
Louisiana	283	0.68	11.90	208--	173	276
Metropolitan	194	0.72	12.29	211-	180	189
Rural	89	0.60-	11.03	202	157	87
Oklahoma	274	0.72	11.09	285	201	265
Metropolitan	121	0.67	11.46	298	182	117
Rural	153	0.77	10.80	275	216	148

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Replacement of the head of the femur	Other non-infectious problems related to the hip	Infectious complications related to surgery	General surgical complications
South Carolina	144	85	101	27	32	16	27
Metropolitan	135	81	108	18	27	27	36
Rural	156	91	91	39	39	0	13
Georgia	181	94	106	30	36	18	22
Metropolitan	183	106	125	33	51	22	18
Rural	178	80	84	27	18	13	27
Florida	181	97	103	26	43	15	19
Metropolitan	177	96	101	26	41	14	21
Rural	212	109	124	29	66	29	0
East South Central	201++	87	97	22	40	18	18
Metropolitan	213++	101	110	28	50	24	8-
Rural	189	74	85	15-	30	12	28+
Kentucky	226+	117	128	34	45	28	22
Metropolitan	291++	149+	149	43	64	28	14
Rural	184	97	115	28	32	28	28
Tennessee	201	85	98	20	45	16	16
Metropolitan	191	97	106	23	50	23	9
Rural	219	67	86	14	38	5	29
Alabama	173	73	82	18	35	18	12
Metropolitan	175	85	100	24	52	24	0
Rural	168	53	53	8	8	8	31
Mississippi	203	68	72	13	25	8	25
Metropolitan	300	60	80	40	0	20	20
Rural	176	70	70	5	32	5	27
West South Central	201++	94	101	31	34	21+	14
Metropolitan	181	87	89	33	27--	15	14
Rural	230++	103	117	29	42	31+	15
Arkansas	223+	77	80	18	30	18	15
Metropolitan	144	52	52	10	21	0	21
Rural	254++	88	92	21	33	25	13
Louisiana	199	101	127	33	47	18	29
Metropolitan	201	101	101	37	32	5	26
Rural	195	103	184+	23	80	46	34
Oklahoma	219	132+	143	57++	49	26	11
Metropolitan	171	103	103	51	34	17	0
Rural	257+	155+	176+	61+	61	34	20

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Texas	1,030	0.70	12.18	278	186	998
Metropolitan	708	0.69	12.61	282	184	690
Rural	322	0.72	11.25	267	193	308
West	3,631	0.80++	10.27	269	188	3,529
Metropolitan	2,988	0.82++	10.43	274	187	2,901
Rural	643	0.72	9.52	244-	193	628
Mountain	902	0.75	10.33	261	174	877
Metropolitan	580	0.80+	10.76	284	169	560
Rural	322	0.67	9.54	217--	183	317
Montana	68	0.70	10.96	279	250	68
Metropolitan	15	0.71	15.40	400	333	15
Rural	53	0.70	9.70	245	226	53
Idaho	54	0.49--	9.06	241	167	54
Metropolitan	15	0.81	8.40	200	67	15
Rural	39	0.43--	9.31	256	205	39
Wyoming	42	0.99	13.90	167	119	42
Metropolitan	19	1.55++	16.21	368	53	19
Rural	23	0.76	12.00	0--	174	23
Colorado	233	0.87+	9.92	275	189	225
Metropolitan	177	0.88+	10.37	288	175	169
Rural	56	0.86	8.50	232	232	56
New Mexico	84	0.67	10.04	167--	167	81
Metropolitan	25	0.48--	8.88	120	200	24
Rural	59	0.80	10.53	186	153	57
Arizona	265	0.76	11.00	279	162	257
Metropolitan	216	0.84	11.23	278	162	209
Rural	49	0.54--	10.02	286	163	48
Utah	92	0.72	8.60	337	207	87
Metropolitan	60	0.64	8.88	400	250	57
Rural	32	0.91	8.06	219	125	30
Nevada	64	0.78	9.94	203	94--	63
Metropolitan	53	0.82	10.60	208	94-	52
Rural	11	0.63	6.73	182	91	11

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Replacement of the head of the femur	Other non-infectious problems related to the hip	Infectious complications related to surgery	General surgical complications
Texas	190	87	89	29	27--	22	11
Metropolitan	183	86	88	32	26-	19	12
Rural	208	91	91	23	29	29	10
West	169	92	101	26	50	15	11-
Metropolitan	170	94	102	27	48	15	12
Rural	169	83	99	19	59	13	8
Mountain	170	95	108	18	63+	16	11
Metropolitan	166	88	95	16	55	11	13
Rural	177	107	132	22	76+	25	9
Montana	191	103	103	0	59	29	15
Metropolitan	133	0	0	0	0	0	0
Rural	208	132	132	0	75	38	19
Idaho	167	167	185	19	167++	0	0
Metropolitan	133	67	67	0	67	0	0
Rural	179	205	231+	26	205++	0	0
Wyoming	71	143	190	24	143+	0	24
Metropolitan	53	105	105	0	105	0	0
Rural	87	174	261	43	174+	0	43
Colorado	200	80	89	4-	49	13	22
Metropolitan	225	95	107	6	59	18	24
Rural	125	36	36	0	18	0	18
New Mexico	185	49	49	12	25	12	0
Metropolitan	167	42	42	0	42	0	0
Rural	193	53	53	18	18	18	0
Arizona	183	97	113	31	43	27	12
Metropolitan	167	96	100	24	53	10	14
Rural	250	104	167	63	0	104++	0
Utah	126	103	126	34	80	11	0
Metropolitan	123	105	105	35	53	18	0
Rural	133	100	167	33	133	0	0
Nevada	95-	79	95	16	79	0	0
Metropolitan	77	58	77	19	58	0	0
Rural	182	182	182	0	182	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Pacific	2,729	0.82++	10.25	272	193	2,652
Metropolitan	2,408	0.82++	10.35	272	192	2,341
Rural	321	0.77	9.50	271	202	311
Washington	371	0.80	8.97	321	205	367
Metropolitan	282	0.81	9.24	337+	209	279
Rural	89	0.78	8.10	270	191	88
Oregon	208	0.68	9.47	288	236	201
Metropolitan	123	0.68	9.73	301	236	120
Rural	85	0.70	9.09	271	235	81
California	2,077	0.84++	10.43	260	187	2,013
Metropolitan	1,957	0.84++	10.46	260	186	1,897
Rural	120	0.81	9.98	275	200	116
Alaska	16	0.98	15.13	313	188	15
Metropolitan	3	0.53	16.67	333	0	3
Rural	13	1.21	14.77	308	231	12
Hawaii	57	0.71	13.33	298	193	56
Metropolitan	43	0.75	13.81	326	233	42
Rural	14	0.62	11.86	214	71	14

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Replace- ment of the head of the femur	Other non- infectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Pacific	169	91	99	28	45	14	11-
Metropolitan	170	96	103	30	46	16	12
Rural	161	58-	64-	16	42	0-	6
Washington	191	109	123	22	82+	14	5
Metropolitan	176	118	133	22	86+	18	7
Rural	239	80	91	23	68	0	0
Oregon	134	60	70	10	50	5	5
Metropolitan	150	75	83	17	50	8	8
Rural	111	37	49	0	49	0	0
California	166	91	97	30	38	16	13
Metropolitan	169	93	100	31	40	17	13
Rural	121	52	52	17	17	0	17
Alaska	133	67	67	0	67	0	0
Metropolitan	0	0	0	0	0	0	0
Rural	167	83	83	0	83	0	0
Hawaii	268	107	107	71	36	0	0
Metropolitan	262	119	119	71	48	0	0
Rural	286	71	71	71	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
United States	19,719	0.74	13.09	278	195	19,058
Northeast	4,310	0.69--	17.64	313++	187	4,152
New England	1,166	0.74	15.43	277	190	1,141
Maine	99	0.65	13.94	364	202	97
Bangor	9	0.56	10.11	333	333	8
Lewiston-Auburn	14	1.04	19.86	500	214	14
Portland	30	0.57	14.70	200	167	29
New Hampshire	99	0.86	13.19	273	172	99
Manchester	39	0.88	14.62	282	205	39
Portsmouth	29	0.98	13.28	345	138	29
Vermont	48	0.76	16.17	333	229	48
Burlington	13	1.25	28.46	308	462	13
Massachusetts	506	0.71	17.67	271	194	488
Boston	329	0.77	16.33	274	195	319
New Bedford	28	0.43--	39.64	357	286	26
Pittsfield	5	0.25--	11.40	0	0	5
Springfield	64	0.89	15.44	281	250	62
Worcester	58	0.81	18.28	190	138	56
Rhode Island	95	0.72	15.78	253	221	94
Providence	95	0.72	15.78	253	221	94
Connecticut	319	0.80	12.81	260	172	315
Bridgeport	80	0.83	14.44	350	213	79
Hartford	107	0.68	11.50	206	103--	106
New Haven	76	0.74	13.21	224	237	75
New London	36	1.30++	11.25	306	139	36

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Replace- ment of the head of the femur	Other non- infectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
United States	172	89	97	26	42	14	15
Northeast	148--	84	91	28	38	10--	15
New England	147-	84	89	31	32	11	15
Maine	175	124	134	41	72	10	10
Bangor	125	125	125	0	125	0	0
Lewiston-Auburn	71	71	71	0	71	0	0
Portland	172	138	138	103	0	0	34
New Hampshire	192	111	111	20	51	20	20
Manchester	205	128	128	26	51	26	26
Portsmouth	103	34	34	0	34	0	0
Vermont	188	63	83	42	21	0	21
Burlington	231	77	77	77	0	0	0
Massachusetts	137-	86	88	33	23--	14	18
Boston	150	103	103	38	25	13	28
New Bedford	154	115	154	38	77	38	0
Pittsfield	200	0	0	0	0	0	0
Springfield	97-	32	32	32	0	0	0
Worcester	125	71	71	18	18	36	0
Rhode Island	223	32	32-	0	0-	21	11
Providence	223	32	32-	0	0-	21	11
Connecticut	111--	79	89	35	41	3	10
Bridgeport	114	89	114	51	51	0	13
Hartford	123	75	75	38	28	0	9
New Haven	67--	67	80	40	40	0	0
New London	111	111	111	0	83	28	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Middle Atlantic	3,144	0.67--	18.46	326++	186	3,011
New York	1,466	0.68--	22.38	360++	184	1,398
Albany	79	0.69	29.96	418+	203	74
Binghamton	17	0.48-	18.71	235	353	17
Buffalo	83	0.62	31.30	361	169	80
Elmira	5	0.36-	13.20	400	0	5
Glens Falls	12	0.79	21.08	333	83	12
Nassau-Suffolk	184	0.62--	21.11	348+	190	174
New York	744	0.75	21.37	353++	185	706
Niagara Falls	21	0.68	15.19	333	95	20
Orange County	13	0.43--	14.85	154	77	13
Poughkeepsie	21	0.75	13.86	333	95	21
Rochester	62	0.60	25.74	371	210	61
Syracuse	38	0.51--	15.34	368	132	38
Utica-Rome	27	0.58	19.96	333	185	25
New Jersey	616	0.67-	17.28	325+	201	588
Atlantic City	39	0.84	14.92	385	179	37
Bergen-Passaic	111	0.65	18.32	252	180	104
Jersey City	37	0.58	19.86	270	270	37
Middlesex	61	0.67	16.97	295	131	59
Monmouth-Ocean	96	0.62	14.64	302	188	90
Newark	150	0.71	19.03	353	200	143
Trenton	20	0.52	17.25	600+	250	20
Vineland	13	0.79	17.23	385	154	13
Pennsylvania	1,062	0.64--	13.73	281	180	1,025
Allentown	71	0.75	12.54	366	225	69
Altoona	8	0.39--	10.13	250	250	8
Beaver County	17	0.62	13.82	353	294	15
Erie	29	0.82	10.90	207	138	26
Harrisburg	42	0.58	11.95	333	214	38
Johnstown	28	0.70	12.11	286	143	27
Lancaster	28	0.58	14.11	429	286	26
Philadelphia	455	0.80	15.40	255	193	441
Pittsburgh	163	0.50--	13.64	344	227	157
Reading	18	0.37--	11.28	222	167	17
Scranton	50	0.41--	15.20	260	100	49
Sharon	6	0.32--	9.33	167	333	5
State College	11	1.10	8.45	182	182	11
Williamsport	19	1.13	16.00	158	105	18
York	28	0.58	11.29	429	214	28

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Replace- ment of the head of the femur	Other non- infectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Middle Atlantic	148--	84	91	27	40	9--	15
New York	127--	79	86	24	42	7--	12
Albany	108	68	81	27	27	14	14
Binghamton	118	0	0	0	0	0	0
Buffalo	188	63	63	13	38	0	13
Elmira	200	0	0	0	0	0	0
Glens Falls	83	0	0	0	0	0	0
Nassau-Suffolk	98--	69	75	29	29	6	11
New York	130--	92	101	28	45	11	16
Niagara Falls	100	150	200	50	150	0	0
Orange County	154	154	154	77	77	0	0
Poughkeepsie	48	95	95	0	95	0	0
Rochester	131	49	49	16	33	0	0
Syracuse	184	26	26	0	0	0	26
Utica-Rome	80	40	40	0	40	0	0
New Jersey	158	94	100	20	46	10	24
Atlantic City	162	108	108	54	27	0	27
Bergen-Passaic	135	48	58	10	29	0	19
Jersey City	189	81	81	0	54	0	27
Middlesex	153	68	85	17	68	0	0
Monmouth-Ocean	144	111	111	33	44	22	11
Newark	154	84	91	14	42	14	21
Trenton	200	150	200	0	100	0	100
Vineland	154	231	231	0	154	0	77
Pennsylvania	172	87	94	34	34	12	14
Allentown	261	130	159	58	58	29	14
Altoona	250	0	0	0	0	0	0
Beaver County	200	0	0	0	0	0	0
Erie	231	77	77	0	38	38	0
Harrisburg	158	26	26	0	26	0	0
Johnstown	148	148	185	74	111	0	0
Lancaster	192	154	154	38	77	38	0
Philadelphia	172	91	91	36	27	5	23
Pittsburgh	178	76	76	19	25	13	19
Reading	59	0	0	0	0	0	0
Scranton	102	122	143	82	20	20	20
Sharon	400	200	200	0	0	200	0
State College	182	91	91	0	91	0	0
Williamsport	222	56	56	56	0	0	0
York	107	0	0	0	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
North Central	4,816	0.70--	11.88	284	199	4,656
East North Central	3,246	0.68--	12.35	287	203	3,142
Ohio	908	0.72	12.15	291	207	878
Akron	41	0.54-	10.27	171	195	40
Canton	37	0.71	11.32	243	243	36
Cincinnati	100	0.63	13.36	270	160	96
Cleveland	150	0.62-	13.07	293	193	144
Columbus	108	0.89	10.04	296	213	103
Dayton	92	0.89	11.91	217	163	91
Hamilton	17	0.65	11.18	176	176	17
Lima	14	0.72	12.14	286	71	14
Lorain-Elyria	20	0.73	14.30	350	250	20
Mansfield	2	0.13--	13.50	500	500	2
Steubenville	33	1.50++	13.79	182	242	33
Toledo	40	0.57	12.30	350	275	39
Youngstown	26	0.38--	14.85	346	308	26
Indiana	561	0.90++	11.02	246	209	541
Anderson	17	0.99	12.53	353	118	17
Bloomington	5	0.63	14.00	200	0	5
Elkhart-Goshen	14	0.89	11.29	71	357	13
Evansville	29	0.84	9.03	172	103	27
Fort Wayne	30	0.80	11.77	200	300	27
Gary-Hammond	18	0.29--	14.61	167	278	17
Indianapolis	172	1.45++	10.94	302	227	164
Kokomo	9	0.83	9.67	222	222	9
Lafayette	5	0.45	10.00	400	200	5
Muncie	16	1.16	10.13	313	188	16
South Bend	22	0.66	11.23	182	227	22
Terre Haute	17	0.87	14.59	353	235	17
Illinois	804	0.64--	13.66	306	211	780
Aurora-Elgin	16	0.52	14.25	125	313	16
Bloomington	11	0.87	11.27	0	91	11
Champaign	8	0.60	10.50	125	0	8
Chicago	334	0.55--	15.21	356++	210	323
Decatur	13	0.81	15.54	308	154	13
Joliet	15	0.53	16.53	333	267	15
Kankakee	4	0.33	12.75	250	500	4
Lake County	49	1.36++	13.92	388	204	48
Peoria	30	0.69	14.30	367	267	27
Rockford	12	0.42--	13.83	250	333	12
Springfield	16	0.65	14.69	188	0	16

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Replace- ment of the head of the femur	Other non- infectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
North Central	174	88	95	24	44	12	15
East North Central	172	89	96	25	42	14	15
Ohio	151	92	99	26	50	9	14
Akron	125	150	150	75	75	0	0
Canton	111	56	56	28	28	0	0
Cincinnati	198	83	104	31	52	0	21
Cleveland	181	118	118	14	56	28	21
Columbus	136	58	78	19	49	0	10
Dayton	132	143	143	33	77	22	11
Hamilton	59	59	59	59	0	0	0
Lima	71	214	214	0	214+	0	0
Lorain-Elyria	250	100	100	50	0	0	50
Mansfield	0	0	0	0	0	0	0
Steubenville	212	91	91	30	30	0	30
Toledo	128	77	77	26	26	26	0
Youngstown	231	115	115	38	38	0	38
Indiana	185	85	92	26	43	15	9
Anderson	235	0	0	0	0	0	0
Bloomington	200	0	0	0	0	0	0
Elkhart-Goshen	154	0	0	0	0	0	0
Evansville	222	74	74	37	37	0	0
Fort Wayne	111	74	74	0	74	0	0
Gary-Hammond	353	294+	294	118	59	0	118
Indianapolis	201	79	91	37	24	24	6
Kokomo	111	222	222	0	111	111	0
Lafayette	0	0	0	0	0	0	0
Muncie	313	63	63	0	63	0	0
South Bend	182	91	91	0	45	45	0
Terre Haute	118	0	0	0	0	0	0
Illinois	188	96	108	26	42	21	19
Aurora-Elgin	188	250	250	125	125	0	0
Bloomington	0	91	91	0	91	0	0
Champaign	250	125	125	125	0	0	0
Chicago	189	96	115	12	53	25	25
Decatur	231	77	154	0	154	0	0
Joliet	267	67	67	67	0	0	0
Kankakee	750	500	500	250	0	0	250
Lake County	146	83	104	0	83	21	0
Peoria	185	148	148	74	37	37	0
Rockford	83	83	83	0	0	83	0
Springfield	188	63	63	63	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Michigan	624	0.64--	12.61	285	197	609
Ann Arbor	21	1.18	12.19	190	286	21
Battle Creek	9	0.53	13.11	333	111	9
Benton Harbor	12	0.56	12.75	417	83	12
Detroit	266	0.59--	14.51	297	188	259
Flint	24	0.56	16.00	250	292	23
Grand Rapids	68	1.06+	8.35	235	221	66
Jackson	11	0.65	12.27	182	91	10
Kalamazoo	9	0.42-	11.00	222	0	9
Lansing	19	0.59	12.00	316	158	19
Muskegon	15	0.79	12.20	333	200	15
Saginaw	15	0.36--	12.07	67	67	15
Wisconsin	349	0.57--	11.56	301	175	334
Appleton	14	0.41--	11.00	429	286	13
Eau Claire	12	0.71	11.83	83	83	12
Green Bay	4	0.21--	12.50	0	0	4
Janesville	10	0.60	13.20	300	100	10
Kenosha	7	0.49	11.86	286	143	6
LaCrosse	20	1.69++	11.10	200	0-	20
Madison	24	0.78	8.38	250	208	23
Milwaukee	80	0.48--	14.10	388+	263	74
Racine	15	0.73	13.47	133	200	14
Sheboygan	11	0.76	10.36	91	91	11
Wausau	3	0.23-	13.00	0	0	3
West North Central	1,570	0.73	10.91	278	189	1,514
Minnesota	316	0.80	9.58	285	187	304
Duluth	23	0.77	9.74	261	130	23
Minneapolis	154	1.09++	8.77	292	169	147
Rochester	7	0.75	13.43	571	143	7
St. Cloud	4	0.33	9.50	0	0	4
Iowa	317	0.78	9.69	271	180	308
Cedar Rapids	9	0.47	8.11	333	333	9
Davenport	45	1.01	11.07	222	289	43
Des Moines	54	1.35++	10.72	296	130	52
Dubuque	13	1.13	8.92	385	154	12
Iowa City	5	0.80	13.00	400	0	5
Sioux City	29	1.82++	12.31	207	276	27
Waterloo	13	0.67	8.08	154	77	13

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Replace- ment of the head of the femur	Other non- infectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Michigan	158	66-	69-	18	30	10	11
Ann Arbor	333	190	190	95	48	0	48
Battle Creek	111	0	0	0	0	0	0
Benton Harbor	83	0	0	0	0	0	0
Detroit	139	77	77	8	35	15	19
Flint	174	43	43	0	43	0	0
Grand Rapids	167	30	30	0	30	0	0
Jackson	100	100	100	100	0	0	0
Kalamazoo	111	0	0	0	0	0	0
Lansing	158	53	53	53	0	0	0
Muskegon	133	0	0	0	0	0	0
Saginaw	267	133	200	133	67	0	0
Wisconsin	189	111	120	36	42	18	24
Appleton	154	154	154	77	0	77	0
Eau Claire	167	0	0	0	0	0	0
Green Bay	0	0	0	0	0	0	0
Janesville	100	100	100	100	0	0	0
Kenosha	0	167	167	0	0	167	0
LaCrosse	250	100	100	50	50	0	0
Madison	217	43	43	0	0	0	43
Milwaukee	176	68	68	14	27	14	14
Racine	143	143	214	143	0	0	71
Sheboygan	91	182	182	0	182	0	0
Wausau	333	333	333	0	333	0	0
West North Central	180	86	92	20	49	8--	15
Minnesota	132-	66	69	20	39	3	7
Duluth	87	174	174	87	43	0	43
Minneapolis	150	48-	48-	0-	34	0	14
Rochester	0	0	0	0	0	0	0
St. Cloud	0	0	0	0	0	0	0
Iowa	136	88	91	13	49	16	13
Cedar Rapids	111	111	111	0	111	0	0
Davenport	163	47	47	23	0	0	23
Des Moines	135	96	115	38	77	0	0
Dubuque	0	250	250	83	167	0	0
Iowa City	0	0	0	0	0	0	0
Sioux City	185	111	111	0	74	37	0
Waterloo	231	0	0	0	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Missouri	488	0.74	12.28	275	205	469
Columbia	8	0.93	10.88	125	125	8
Joplin	8	0.42-	12.38	250	500	7
Kansas City	122	0.79	13.26	270	189	118
St. Joseph	9	0.66	13.89	444	111	8
St. Louis	191	0.67	12.71	283	188	184
Springfield	38	1.37++	15.08	289	158	37
North Dakota	47	0.55-	10.81	191	128	45
Bismarck	2	0.25	14.50	500	0	2
Fargo	10	0.71	8.30	200	300	8
Grand Forks	4	0.70	14.00	0	0	4
South Dakota	57	0.59	10.02	281	140	55
Rapid City	5	0.70	8.80	0	0	5
Sioux Falls	3	0.23-	10.33	0	0	3
Nebraska	111	0.53--	11.23	315	225	105
Lincoln	16	0.76	10.69	313	438	14
Omaha	35	0.61	13.66	343	114	35
Kansas	234	0.76	11.59	286	179	228
Lawrence	0	0.00				
Topeka	17	0.90	10.47	59	118	17
Wichita	37	0.81	10.84	297	135	36
South	6,962	0.78++	12.58	257--	200	6,721
South Atlantic	3,475	0.74	12.76	247--	209+	3,357
Delaware	57	0.81	11.98	175-	281	56
Wilmington	47	0.81	13.00	255	298	45
Maryland	273	0.63--	13.74	267	223	260
Baltimore	118	0.48--	14.37	347	220	114
Cumberland	5	0.29--	12.40	0	0	5
Hagerstown	19	1.31	10.89	158	158	19
Dist. of Columbia	23	0.35--	13.52	174	217	23
Washington	150	0.58--	14.29	233	227	145
Virginia	355	0.63--	13.75	225-	220	338
Charlottesville	9	0.75	8.89	444	444	9
Danville	14	0.90	17.14	214	357	13
Lynchburg	8	0.44	12.13	125	125	8
Norfolk	61	0.59-	13.33	279	197	57
Richmond	70	0.82	13.34	186-	229	68
Roanoke	17	0.56	11.18	59	235	15

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Replace- ment of the head of the femur	Other non- infectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Missouri	217+	90	102	15	55	11	21
Columbia	500	250	250	0	0	0	250+
Joplin	143	0	0	0	0	0	0
Kansas City	246	76	76	17	25	17	17
St. Joseph	250	125	125	0	125	0	0
St. Louis	201	71	87	11	60	5	11
Springfield	108	54	54	27	27	0	0
North Dakota	222	133	156	22	89	0	44
Bismarck	500	500	500	0	500	0	0
Fargo	250	0	0	0	0	0	0
Grand Forks	0	0	0	0	0	0	0
South Dakota	218	109	109	18	73	0	18
Rapid City	200	200	200	0	200	0	0
Sioux Falls	0	0	0	0	0	0	0
Nebraska	133	57	57	29	19	0	10
Lincoln	143	71	71	71	0	0	0
Omaha	200	29	29	0	29	0	0
Kansas	232+	101	105	39	48	4	13
Lawrence							
Topeka	118	118	118	0	118	0	0
Wichita	167	139	139	56	56	0	28
South	188++	91	99	26	38	18+	17
South Atlantic	174	90	98	24	40	15	19
Delaware	107	36	54	0	54	0	0
Wilmington	89	44	44	0	22	22	0
Maryland	177	58-	62-	19	19-	4	19
Baltimore	211	70	79	18	26	0	35
Cumberland	0	0	0	0	0	0	0
Hagerstown	211	158	158	105	53	0	0
Dist. of Columbia	43	0	0	0	0	0	0
Washington	131	21--	21--	0-	7-	7	7
Virginia	216	104	118	18	53	21	27
Charlottesville	444	222	222	0	111	111	0
Danville	0	0	0	0	0	0	0
Lynchburg	0	500+	500+	125	375++	0	0
Norfolk	193	123	140	35	18	0	88++
Richmond	309+	118	132	29	74	29	0
Roanoke	67	0	0	0	0	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
West Virginia	236	0.97++	13.47	246	208	225
Charleston	24	0.70	17.38	417	292	23
Huntington	48	1.17+	12.60	188	146	46
Parkersburg	24	1.21	11.92	250	292	23
Wheeling	25	1.14	13.92	160	280	22
North Carolina	395	0.57--	12.49	289	182	384
Asheville	9	0.37--	12.89	111	222	9
Burlington	9	0.62	13.00	111	111	9
Charlotte	58	0.53--	10.90	207	155	57
Fayetteville	1	0.07--	12.00	0	0	1
Greensboro	40	0.40--	16.08	300	125	37
Hickory	18	0.77	11.56	556	278	18
Jacksonville	3	0.58	14.00	0	0	3
Raleigh-Durham	41	0.73	11.61	293	171	41
Wilmington	2	0.16--	16.00	0	500	2
South Carolina	192	0.58--	14.37	260	193	188
Anderson	33	1.99++	16.27	242	212	33
Charleston	21	0.61	19.62	238	381	20
Columbia	17	0.48-	13.59	235	118	17
Florence	3	0.27	10.67	667	333	3
Greenville	26	0.39--	11.31	231	192	26
Georgia	517	0.92++	11.68	238-	205	498
Albany	9	0.97	9.89	222	222	9
Athens	17	1.26	10.29	176	59	17
Atlanta	183	0.97++	10.89	251	208	174
Augusta	19	0.58	12.16	263	211	19
Columbus	18	0.79	13.28	278	389	18
Macon	25	0.96	14.80	200	360	23
Savannah	13	0.51	11.92	231	231	12

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Replace- ment of the head of the femur	Other non- infectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
West Virginia	182	71	71	4-	31	27	9
Charleston	174	87	87	0	87	0	0
Huntington	130	87	87	0	43	43	0
Parkersburg	87	43	43	0	43	0	0
Wheeling	136	45	45	0	0	0	45
North Carolina	130-	96	102	36	42	10	13
Asheville	0	0	0	0	0	0	0
Burlington	111	111	111	111	0	0	0
Charlotte	105	140	140	70	53	0	18
Fayetteville	0	0	0	0	0	0	0
Greensboro	81	81	81	54	27	0	0
Hickory	111	111	167	0	56	56	56
Jacksonville	0	0	0	0	0	0	0
Raleigh-Durham	171	98	98	24	73	0	0
Wilmington	500	0	0	0	0	0	0
South Carolina	144	85	101	27	32	16	27
Anderson	91	30	30	0	0	0	30
Charleston	150	100	150	0	0	50	100
Columbia	294	176	235	59	176	0	0
Florence	333	0	0	0	0	0	0
Greenville	115	77	115	38	0	38	38
Georgia	181	94	106	30	36	18	22
Albany	111	222	222	0	111	111	0
Athens	59	118	118	59	59	0	0
Atlanta	230	115	138	29	63	23	23
Augusta	158	158	158	53	0	53	53
Columbus	222	167	222	111	0	111	0
Macon	130	0	0	0	0	0	0
Savannah	0	0	0	0	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Florida	1,427	0.84++	12.47	243--	213	1,385
Bradenton	49	1.14+	11.22	184	163	48
Daytona Beach	58	0.93	12.26	276	241	55
Fort Lauderdale	155	0.85	13.48	187--	161	153
Fort Myers	29	0.47--	9.66	345	172	29
Fort Pierce	14	0.34--	14.29	71	286	14
Ft. Walton Beach	15	1.48+	13.00	400	200	15
Gainesville	14	0.84	10.36	357	286	13
Jacksonville	64	0.79	11.09	250	203	63
Lakeland	47	0.85	12.83	234	191	46
Melbourne	54	1.16++	13.28	278	148	52
Miami-Hialeah	174	1.03++	15.16	282	190	169
Naples	8	0.34--	12.13	125	250	8
Ocala	18	0.57	12.78	111	278	16
Orlando	88	0.97+	11.25	284	182	86
Panama City	9	0.76	9.67	333	222	9
Pensacola	36	1.20+	12.53	222	139	35
Sarasota	51	0.65	11.37	255	333	50
Tallahassee	9	0.52	9.00	111	333	8
Tampa	297	0.92++	12.33	232	259+	286
West Palm Beach	98	0.70	10.60	235	204	93
East South Central	1,549	0.90++	12.99	262	198	1,488
Kentucky	371	0.88++	12.70	245	164	358
Lexington	19	0.61	10.42	368	211	17
Louisville	79	0.73	13.68	316	177	77
Owensboro	11	1.07	12.09	273	91	11
Tennessee	577	1.05++	12.27	218--	198	551
Chattanooga	69	1.38++	11.16	246	261	66
Clarksville	18	1.44+	16.89	222	111	17
Jackson	5	0.50	11.80	200	400	5
Johnson City	45	0.82	12.60	267	289	42
Knoxville	95	1.34++	12.94	147--	158	92
Memphis	81	0.91	16.35	309	222	75
Nashville	76	0.82	11.96	184-	145	75
Alabama	352	0.76	13.63	330+	205	342
Anniston	10	0.76	11.90	500	200	9
Birmingham	71	0.65	14.10	324	197	71
Dothan	9	0.71	10.11	111	333	9
Florence	12	0.72	16.83	333	0	12
Gadsden	11	0.77	12.55	273	91	10
Huntsville	12	0.70	12.92	250	83	12
Mobile	63	1.25++	15.29	365	238	61
Montgomery	15	0.50	15.00	267	200	14
Tuscaloosa	7	0.51	12.29	286	0	7

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Replace- ment of the head of the femur	Other non- infectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Florida	181	97	103	26	43	15	19
Bradenton	167	63	63	21	21	0	21
Daytona Beach	109	109	109	55	55	0	0
Fort Lauderdale	157	78	78	7	39	7	26
Fort Myers	103	103	138	34	103	0	0
Fort Pierce	214	143	214	0	71	0	143+
Ft. Walton Beach	67	67	67	0	0	0	67
Gainesville	154	77	77	77	0	0	0
Jacksonville	206	143	159	32	63	32	32
Lakeland	109	65	65	0	43	22	0
Melbourne	115	96	96	38	38	19	0
Miami-Hialeah	260++	142+	148	18	71	30	30
Naples	375	0	0	0	0	0	0
Ocala	188	125	125	63	0	0	63
Orlando	163	58	58	23	23	0	12
Panama City	222	111	111	111	0	0	0
Pensacola	286	171	171	86	57	29	0
Sarasota	180	40	60	40	0	20	0
Tallahassee	0	0	0	0	0	0	0
Tampa	185	98	98	21	38	17	21
West Palm Beach	129	75	86	32	22	0	32
East South Central	201++	87	97	22	40	18	18
Kentucky	226+	117	128	34	45	28	22
Lexington	412	176	176	118	59	0	0
Louisville	273+	143	143	13	91	26	13
Owensboro	455	364+	364+	91	91	91	91
Tennessee	201	85	98	20	45	16	16
Chattanooga	167	76	106	45	61	0	0
Clarksville	294	176	176	59	59	59	0
Jackson	200	0	0	0	0	0	0
Johnson City	119	71	95	0	24	48	24
Knoxville	163	141	141	33	65	22	22
Memphis	213	67	80	13	27	27	13
Nashville	213	93	93	13	67	13	0
Alabama	173	73	82	18	35	18	12
Anniston	222	0	0	0	0	0	0
Birmingham	254	99	99	0	42	56+	0
Dothan	0	0	0	0	0	0	0
Florence	0	83	83	83	0	0	0
Gadsden	100	100	200	100	100	0	0
Huntsville	167	0	0	0	0	0	0
Mobile	148	98	98	33	66	0	0
Montgomery	143	143	214	0	214+	0	0
Tuscaloosa	143	0	0	0	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Mississippi	249	0.86+	14.19	293	237	237
Biloxi-Gulfport	17	0.94	12.06	235	235	16
Jackson	23	0.65	15.22	261	261	23
Pascagoula	9	1.05	24.89	111	222	9
West South Central	1,938	0.75	11.95	269	186	1,876
Arkansas	351	1.09++	12.00	279	182	337
Fayetteville	11	0.93	12.18	545	364	8
Fort Smith	21	0.98	12.62	238	143	20
Little Rock	61	1.20++	12.82	426+	164	60
Pine Bluff	5	0.45	9.00	200	0	5
Louisiana	283	0.68	11.90	208--	173	276
Alexandria	7	0.51	10.00	143	0	7
Baton Rouge	23	0.58	11.87	174	43	23
Houma-Thibodaux	6	0.44	12.00	167	667	5
Lafayette	15	1.03	11.73	133	133	15
Lake Charles	15	0.91	12.60	267	333	14
Monroe	13	0.89	9.15	0	308	13
New Orleans	72	0.61	12.79	194	153	70
Shreveport	43	1.17+	13.14	349	186	42
Oklahoma	274	0.72	11.09	285	201	265
Enid	10	1.22	11.90	300	200	10
Lawton	5	0.61	13.00	200	200	5
Oklahoma City	53	0.60	12.47	377	226	50
Tulsa	49	0.69	10.35	245	143	48

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Replace- ment of the head of the femur	Other non- infectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Mississippi	203	68	72	13	25	8	25
Biloxi-Gulfport	250	0	0	0	0	0	0
Jackson	348	130	174	87	0	43	43
Pascagoula	333	0	0	0	0	0	0
West South Central	201++	94	101	31	34	21+	14
Arkansas	223+	77	80	18	30	18	15
Fayetteville	0	0	0	0	0	0	0
Fort Smith	50	100	100	50	0	0	50
Little Rock	183	50	50	17	33	0	0
Pine Bluff	0	0	0	0	0	0	0
Louisiana	199	101	127	33	47	18	29
Alexandria	286	143	143	0	143	0	0
Baton Rouge	174	87	87	43	0	0	43
Houma-Thibodaux	200	200	200	0	0	0	200
Lafayette	133	0	0	0	0	0	0
Lake Charles	286	286	286	71	71	0	143+
Monroe	231	77	77	77	0	0	0
New Orleans	229	71	71	0	57	0	14
Shreveport	143	119	119	95+	0	24	0
Oklahoma	219	132+	143	57++	49	26	11
Enid	300	200	200	100	100	0	0
Lawton	0	200	200	200	0	0	0
Oklahoma City	240	80	80	20	20	40	0
Tulsa	104	83	83	42	42	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Texas	1,030	0.70	12.18	278	186	998
Abilene	12	0.92	14.00	417	167	12
Amarillo	11	0.58	9.27	0	0	11
Austin	31	0.65	21.58	419	97	31
Beaumont	19	0.45--	11.68	158	421	18
Brazoria	10	0.80	12.20	200	100	10
Brownsville	5	0.25--	8.00	200	0	5
Bryan	13	1.87++	11.38	231	231	12
Corpus Christi	13	0.46--	15.00	462	231	12
Dallas	128	0.74	12.43	242	172	125
El Paso	26	0.70	15.54	385	192	24
Fort Worth	66	0.67	12.23	288	91--	65
Galveston	13	0.67	14.69	385	308	11
Houston	144	0.77	12.80	333	257	140
Killeen-Temple	21	1.22	8.67	333	286	21
Laredo	0	0.00--				
Longview	16	0.78	10.00	375	188	16
Lubbock	9	0.47	17.78	667	333	9
McAllen	8	0.29--	8.38	125	0	8
Midland	0	0.00--				
Odessa	7	0.76	9.71	143	286	7
San Angelo	8	0.71	11.38	250	125	7
San Antonio	71	0.66	11.37	225	127	70
Sherman-Denison	15	1.03	13.27	400	267	15
Texarkana	30	1.96++	11.57	200	100	30
Tyler	24	1.32+	12.38	125	167	23
Victoria	2	0.29	7.00	0	0	2
Waco	6	0.25--	8.33	167	0	6
Wichita Falls	6	0.41	7.17	0	167	6
West	3,631	0.80++	10.27	269	188	3,529
Mountain	902	0.75	10.33	261	174	877
Montana	68	0.70	10.96	279	250	68
Billings	9	0.74	16.22	556	333	9
Great Falls	6	0.66	14.17	167	333	6
Idaho	54	0.49--	9.06	241	167	54
Boise City	15	0.81	8.40	200	67	15
Wyoming	42	0.99	13.90	167	119	42
Casper	7	1.30	16.29	429	0	7
Cheyenne	12	1.74+	16.17	333	83	12

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges				
	Within 90 days for any cause	With an event	Total (1)	Replace- ment of the head of the femur	Other non- infectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Texas	190	87	89	29	27--	22	11
Abilene	83	167	167	83	0	83	0
Amarillo	0	182	182	182	0	0	0
Austin	32	32	32	0	32	0	0
Beaumont	222	56	56	0	56	0	0
Brazoria	100	200	200	100	100	0	0
Brownsville	200	200	200	200	0	0	0
Bryan	167	0	0	0	0	0	0
Corpus Christi	167	83	83	0	0	83	0
Dallas	192	80	96	32	16	24	24
El Paso	167	42	42	0	0	42	0
Fort Worth	108	46	46	15	31	0	0
Galveston	0	91	91	91	0	0	0
Houston	264+	100	100	43	21	14	21
Killeen-Temple	333	143	143	0	48	48	48
Laredo							
Longview	63	63	63	0	63	0	0
Lubbock	222	111	111	0	111	0	0
McAllen	125	0	0	0	0	0	0
Midland							
Odessa	286	143	143	0	0	143	0
San Angelo	0	0	0	0	0	0	0
San Antonio	171	71	71	14	43	0	14
Sherman-Denison	267	67	67	0	67	0	0
Texarkana	400+	200	200	100	0	67	33
Tyler	87	0	0	0	0	0	0
Victoria	0	0	0	0	0	0	0
Waco	0	167	167	167	0	0	0
Wichita Falls	167	333	333	0	167	167	0
West	169	92	101	26	50	15	11-
Mountain	170	95	108	18	63+	16	11
Montana	191	103	103	0	59	29	15
Billings	222	0	0	0	0	0	0
Great Falls	0	0	0	0	0	0	0
Idaho	167	167	185	19	167++	0	0
Boise City	133	67	67	0	67	0	0
Wyoming	71	143	190	24	143+	0	24
Casper	143	286	286	0	286	0	0
Cheyenne	0	0	0	0	0	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Colorado	233	0.87+	9.92	275	189	225
Boulder-Longmont	25	1.65++	11.72	240	160	23
Colorado Springs	13	0.52	10.00	77	154	13
Denver	99	0.83	10.49	364	182	93
Fort Collins	18	1.19	9.28	111	167	18
Greeley	11	0.95	10.91	364	273	11
Pueblo	11	0.72	7.91	182	91	11
New Mexico	84	0.67	10.04	167--	167	81
Albuquerque	21	0.62	8.86	95	190	20
Las Cruces	1	0.11-	10.00	0	0	1
Santa Fe	3	0.35	8.67	333	333	3
Arizona	265	0.76	11.00	279	162	257
Phoenix	173	0.92++	10.95	272	156	167
Tucson	43	0.61	12.35	302	186	42
Utah	92	0.72	8.60	337	207	87
Provo-Orem	12	0.75	7.67	417	417	11
Salt Lake City	48	0.62	9.19	396	208	46
Nevada	64	0.78	9.94	203	94--	63
Las Vegas	41	0.91	11.34	268	73	40
Reno	12	0.63	8.08	0	167	12
Pacific	2,729	0.82++	10.25	272	193	2,652
Washington	371	0.80	8.97	321	205	367
Bellingham	8	0.59	7.50	250	250	8
Bremerton	10	0.65	7.50	200	200	10
Olympia	20	1.40+	7.75	150	100	19
Richland	11	0.88	11.18	455	0	11
Seattle	125	0.78	10.10	376+	200	125
Spokane	39	0.95	8.41	513++	282	38
Tacoma	26	0.52-	7.19	269	269	26
Vancouver	25	1.47+	9.56	120	200	25
Yakima	18	0.79	9.89	333	278	17
Oregon	208	0.68	9.47	288	236	201
Eugene	20	0.69	8.25	150	150	19
Medford	15	0.74	9.73	267	200	15
Portland	74	0.75	9.77	324	257	72
Salem	14	0.42--	11.64	429	286	14

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Replace- ment of the head of the femur	Other non- infectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Colorado	200	80	89	4-	49	13	22
Boulder-Longmont	217	43	43	0	43	0	0
Colorado Springs	231	154	154	0	0	77	77
Denver	237	97	108	11	54	11	32
Fort Collins	222	167	222	0	167	56	0
Greeley	273	0	0	0	0	0	0
Pueblo	91	91	91	0	91	0	0
New Mexico	185	49	49	12	25	12	0
Albuquerque	200	50	50	0	50	0	0
Las Cruces	0	0	0	0	0	0	0
Santa Fe	0	0	0	0	0	0	0
Arizona	183	97	113	31	43	27	12
Phoenix	162	96	102	30	48	6	18
Tucson	190	95	95	0	71	24	0
Utah	126	103	126	34	80	11	0
Provo-Orem	273	182	182	0	91	91	0
Salt Lake City	87	87	87	43	43	0	0
Nevada	95-	79	95	16	79	0	0
Las Vegas	75	50	75	25	50	0	0
Reno	83	83	83	0	83	0	0
Pacific	169	91	99	28	45	14	11-
Washington	191	109	123	22	82+	14	5
Bellingham	0	0	0	0	0	0	0
Bremerton	0	100	100	0	100	0	0
Olympia	158	105	105	105	0	0	0
Richland	182	182	455++	0	455++	0	0
Seattle	184	120	120	16	72	24	8
Spokane	263	158	158	26	79	26	26
Tacoma	115	192	192	38	115	38	0
Vancouver	160	40	80	0	80	0	0
Yakima	235	59	59	0	59	0	0
Oregon	134	60	70	10	50	5	5
Eugene	211	105	105	0	53	0	53
Medford	67	133	200	0	200	0	0
Portland	111	42	42	28	14	0	0
Salem	357	143	143	0	71	71	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
California	2,077	0.84++	10.43	260	187	2,013
Anaheim-Santa Ana	136	0.81	10.10	301	162	135
Bakersfield	30	0.67	13.03	367	267	29
Chico	17	0.63	8.94	294	176	16
Fresno	48	0.82	8.88	208	146	45
Los Angeles	504	0.74	11.65	278	179	489
Merced	23	1.71++	7.96	130	217	23
Modesto	27	0.80	9.63	296	148	26
Oakland	180	0.96++	10.43	217-	211	173
Oxnard-Ventura	53	1.07+	10.92	340	151	53
Redding	6	0.34--	6.83	333	167	6
Riverside	170	0.84	10.46	212-	200	162
Sacramento	120	1.00++	9.55	258	200	117
Salinas	18	0.62	7.11	278	278	17
San Diego	214	1.04++	9.80	276	178	208
San Francisco	118	0.72	10.79	203-	178	115
San Jose	89	0.85	9.94	258	270	83
Santa Barbara	40	1.05	11.10	225	225	40
Santa Cruz	16	0.65	9.44	188	63	16
Santa Rosa	53	1.18++	8.42	226	189	52
Stockton	35	0.86	8.97	371	229	32
Vallejo	16	0.45--	9.31	250	63	16
Visalia	24	0.83	9.54	292	83	24
Yuba City	20	1.69++	13.65	250	50	20
Alaska	16	0.98	15.13	313	188	15
Anchorage	3	0.53	16.67	333	0	3
Hawaii	57	0.71	13.33	298	193	56
Honolulu	43	0.75	13.81	326	233	42

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Reduction of transcervical fracture of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Replace- ment of the head of the femur	Other non- infectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
California	166	91	97	30	38	16	13
Anaheim-Santa Ana	230	89	89	15	44	22	7
Bakersfield	172	34	34	0	34	0	0
Chico	125	0	0	0	0	0	0
Fresno	156	89	89	22	0	44	22
Los Angeles	188	84	90	31	33	12	14
Merced	130	87	87	0	0	43	43
Modesto	77	38	38	0	38	0	0
Oakland	214	127	139	35	58	17	29
Oxnard-Ventura	132	113	113	0	75	19	19
Redding	167	333	333	167	0	167	0
Riverside	222	130	154	62+	68	12	12
Sacramento	137	34--	34--	17	0-	17	0
Salinas	118	118	118	59	59	0	0
San Diego	115-	87	91	34	38	10	10
San Francisco	113-	96	96	35	43	17	0
San Jose	193	169+	193+	72+	72	36	12
Santa Barbara	325+	125	125	0	25	50	50
Santa Cruz	125	0	0	0	0	0	0
Santa Rosa	19--	38	38	19	19	0	0
Stockton	94	31	31	0	31	0	0
Vallejo	188	63	63	0	0	63	0
Visalia	125	167	208	42	125	42	0
Yuba City	100	150	150	100	0	0	50
Alaska	133	67	67	0	67	0	0
Anchorage	0	0	0	0	0	0	0
Hawaii	268	107	107	71	36	0	0
Honolulu	262	119	119	71	48	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Replacement of the head of the femur

Replacement of the head of the femur is frequently used to treat fractures of the neck of the femur. Replacement of the head of the femur with a metal prosthesis is often an alternative treatment to reduction of the fracture. Data on hospital stays for persons with a diagnosis of cancer or aseptic necrosis are excluded from this analysis because the outcomes for these patients are expected to be worse than the outcomes for other persons undergoing replacement of the head of the femur.

In 1986, among the Medicare population aged 65 years or over who did not have end stage renal disease and were not members of health maintenance organizations, 43,063 hospitalizations for replacement of the head of the femur occurred that met the study criteria. These cases represented 1.61 procedures per 1,000 enrollees. Information about adverse events during the index stay, deaths within a year of surgery, and readmissions are shown in Tables 1-4.

Rates for specific events

The ICD-9-CM codes that were used for selecting cases for this study are provided in Table 1. The diagnoses (with their ICD-9-CM codes) that were identified with the aid of a panel of orthopedic surgeons as signifying potential adverse outcomes following replacement of the head of the femur are also listed. The conditions represented by these diagnoses are referred to as adverse events. The focus of this study is on adverse events occurring both in the index stay, when the surgery was performed, and in subsequent admissions. The adverse events are categorized into four event groups:

1. Noninfectious problems related to the hip.
2. Infectious complications related to surgery.
3. General surgical complications.
4. Other events.

These event categories are similar to those used in the section on total hip replacement.

Table 1 also includes information on which codes were counted as adverse events if they occurred in the index stay, which codes were counted if they were the principal diagnosis for a readmission following replacement of the head of

the femur, and the time interval required in order to include a readmission (for example, within 30 days of the date of surgery).

As noted in the introduction, Medicare claims files for hospital stays contain up to five diagnosis codes and three procedure codes. For this study, all five diagnosis positions and all three procedure positions were used in counting events that occurred during the index stay. All procedure positions, along with the principal diagnosis position, were considered for readmissions. The index stays occurred in 1986; readmissions were followed up to 1 year after the date of surgery.

During the index stay, 445.28 events occurred per 1,000 procedures performed (Table 1). Of these, only 5.92 events per 1,000 procedures involved Event Group 1, noninfectious problems related to the hip. The two most common events within this group were fracture of shaft or unspecified part of femur (2.16 events per 1,000 procedures) and other complications of internal prosthetic device, implant, and graft (2.14 per 1,000). There were 1.63 dislocations of the hip per 1,000 procedures.

In the index stay, there were 210.97 infectious complications related to surgery (Event Group 2), of which more than one-half (139.73 per 1,000) were urinary tract infection, site not specified. Other frequently occurring events within this group were pneumonia, organism unspecified (21.34 per 1,000), respiratory complications (16.26 per 1,000), and postoperative infection (12.01 per 1,000).

Event Group 3, general surgical complications, was the group that occurred most frequently in the index stay (228.25 events per 1,000 procedures). Within this group, congestive heart failure was the most frequently occurring condition (75.40 per 1,000 procedures), likely reflecting, in part, the advanced age and poor health of many hip fracture patients. Acute posthemorrhagic anemia was also common (38.01 events per 1,000 procedures). Other conditions occurring more often than 15 times per 1,000 procedures in the index stay were decubitus ulcer (16.07) and retention of urine (15.09).

Rates of readmissions with adverse events are also shown in Table 1. There were 73.14 readmissions for adverse events per 1,000 persons discharged alive. The principal diagnoses for these admissions were partitioned according to the four major event groups described previously. In contrast to events occurring during the index stay,

NOTE: For replacement of the head of the femur, records of hospital stays with principal ICD-9-CM procedure code 81.61 or 81.62 and principal ICD-9-CM diagnosis code 820.0 or 820.8 were selected.

Event Group 1, noninfectious problems related to the hip, constituted the most common reason for readmission (31.95 readmissions per 1,000 persons discharged alive). The most common conditions within this category were mechanical complication of internal orthopedic device, implant, and graft occurring within 90 days (13.73 readmissions per 1,000 live discharges) and in the period 91 days-1 year (9.01 readmissions). Fracture of shaft or unspecified part of femur accounted for 7.34 readmissions per 1,000. It should be noted that ICD-9-CM codes do not distinguish between the left and right sides of the body; thus, some readmissions for fracture of shaft or unspecified part of femur may have been for fractures on the opposite side to that involved in the original surgery.

There were 21.26 readmissions per 1,000 live discharges for Event Group 2, infectious complications related to surgery, of which 4.94 per 1,000 were for infections and inflammatory reactions due to internal prosthetic device, implant, and graft. Event Group 3, general surgical complications, accounted for 19.93 readmissions per 1,000, of which the most frequent was decubitus ulcer (6.73 per 1,000).

Patterns by age, sex, and race

Table 2 contains information on outcomes following replacement of the head of the femur for all persons combined and by age, sex, and race. In the index hospital stay, 345 persons experienced one adverse event or more per 1,000 procedures. The average length of stay (ALOS) during the index stay was 14.52 days. The rate of persons dying within a year of surgery was 212 per 1,000 procedures, or 21.2 percent. This is a relatively high death rate compared with rates for the other procedures shown in this volume and reflects the seriousness of a fractured hip for elderly people, as well as the general frailty of people who are at risk for hip fracture. Most deaths occurred after discharge from the hospital, as reflected by the relatively high number of persons discharged alive, 41,289 persons out of 43,063 operated on (95.9 percent).

As also shown in Table 2, 182 persons per 1,000 discharged alive were readmitted at least once for any cause within 90 days of surgery. The number of persons with one readmission or more in which the principal diagnosis or procedure was one of the adverse events shown in Table 1 was 66 per 1,000 persons discharged alive.

Replacement of the head of the femur was performed at an increasing rate with increasing age: 0.52 procedure per 1,000 enrollees aged

65-74 years and 6.04 procedures per 1,000 aged 85 years or over. ALOS did not vary substantially by age. The number of persons experiencing one event or more during the index stay per 1,000 procedures increased with age, from 271 per 1,000 persons aged 65-74 years to 400 per 1,000 aged 85 years or over. Deaths within a year of surgery also increased substantially with age, from 122 deaths per 1,000 procedures for persons aged 65-74 years to 291 per 1,000 aged 85 years or over. The number of persons readmitted for any cause within 90 days of the procedure per 1,000 live discharges increased from 156 for persons aged 65-74 years to 194 for those 85 years or over. Readmissions associated with an adverse event did not vary substantially with age.

This procedure was performed at a substantially higher rate for women than men, 2.18 versus 0.76 per 1,000. On average, men remained in the hospital approximately 1 day longer during the index stay than did women (15.46 days versus 14.31 days). Men experienced a slightly higher rate of adverse events during the index stay (365 persons per 1,000 procedures) than did women (341 persons per 1,000 procedures). Deaths within a year of surgery and readmissions within 90 days of surgery were also more common among men than among women for all age groups. Readmissions involving Event Group 2, infectious complications related to surgery, were more common among men (36 readmissions per 1,000 discharged alive) than among women (18 per 1,000), but other categories of event-related readmissions were about equally common among men and women.

Replacement of the head of the femur was performed at a substantially higher rate for white persons (1.70 procedures per 1,000 enrollees) than for black persons (0.72 procedure per 1,000). This pattern held true for all age and sex groups. ALOS was greater for black persons (16.67 days) than for white persons (14.44 days). Across several outcome measures, black persons experienced higher rates of unfavorable outcomes than white persons. The number of persons experiencing an adverse event in the index stay per 1,000 procedures was higher for black persons than white persons for all age and sex groups except women aged 75 years or over. Death rates within a year of surgery were higher for black persons than for white persons, with the exception of men aged 75-84 years. The number of persons with one readmission or more for any cause within 90 days of the procedure was higher for black persons (239 readmissions per 1,000 discharged alive) than for white persons (181 per 1,000). Overall, black persons had more readmissions for adverse events than white persons

had, but this pattern did not hold true for all age and sex groups.

Variations by geographic area

Tables 3 and 4 contain data on adverse events following replacement of the head of the femur by geographic area. Data by metropolitan and rural areas within each State are shown in Table 3, and data by metropolitan statistical area (MSA) are shown in Table 4. Figures 1 and 2 were derived from the data in these tables.

Tables 3 and 4 contain data for the same measures that are shown by age, sex, and race in Table 2. Data for areas in which the rate was significantly different from the national average are annotated with a "+" or "-" if the local rate was different at the $p = 0.05$ level and with a "++" or "--" if the local rate was different at the $p = 0.01$ level. Details on the statistical tests are contained in the appendix.

Rates of readmissions associated with any type of adverse event are shown by State in Figure 1. Several States with low readmission rates were in New England, although there was not a strong regional pattern. The lowest rates occurred in Vermont and South Dakota (32 readmissions with an event per 1,000 persons discharged alive), although only the South Dakota rate was significantly different from the U.S. rate. The highest rate was in Alaska (125 per 1,000); the highest rate that was significantly different from the U.S. rate occurred in Georgia (105 per 1,000).

State-level readmission rates involving Event Group 1, noninfectious problems related to the hip, are shown in Figure 2. Many of the lowest readmission rates were in New England, and several of the States with high readmission rates were in the West. The lowest rate was in Vermont (11 per 1,000); the lowest rate that was significantly different from the U.S. rate occurred in Alabama (13 per 1,000). The highest rate was in Alaska (125 per 1,000); the highest rate significantly different from the U.S. rate was in Oregon (61 per 1,000).

Urban-rural patterns

Replacement of the head of the femur was performed at a higher rate in rural areas (1.79 procedures per 1,000 enrollees) than in urban areas (1.55 per 1,000). This pattern held true in all census regions except the West. Nationally, index stays were longer, on average, in urban areas (15.20 days) than in rural areas (12.97 days), with a similar pattern in each of the four census regions. Nationally and in all four regions, a higher number of persons experienced an adverse event during the

index stay per 1,000 procedures in urban areas (352 persons per 1,000 procedures nationally) than in rural areas (330 per 1,000 nationally). One-year death rates were slightly higher in urban than rural areas in all census regions except the West.

Nationally, the number of persons with one readmission or more within 90 days of surgery was slightly higher in rural areas (187 persons per 1,000 persons discharged alive) than in urban areas (180 per 1,000). The higher national rate for rural areas reflects the higher readmission rate in rural than urban areas in the South (205 per 1,000 versus 182 per 1,000). In the other three regions, 90-day readmission rates were slightly higher in urban than rural areas. Nationally, the numbers of readmissions for adverse events per 1,000 persons discharged alive were similar in urban and rural areas (72 per 1,000 in urban areas and 75 per 1,000 in rural areas).

Correlations between rates

Pearson correlation coefficients were computed between several pairs of outcome measures, using MSA-level rates and rates for rural areas within States. This was done to determine whether areas with high rates of one measure of adverse outcome were also high on other measures. MSAs with less than five expected events were excluded from the computation of correlations because of small sample size. The number of expected events is the product of the national average rate times the number of procedures in an area.

A small negative relationship was found between the number of persons with one event or more in the index stay per 1,000 procedures and the number of persons with one readmission or more with an event per 1,000 live discharges ($r = -0.21$, $n = 133$). This indicates that areas with a relatively high number of short-term problems in the index stay do not tend to have high numbers of poor outcomes necessitating readmission. ALOS may confound the relationship between index stay events and readmissions, however, because some problems may become evident during the index stay in areas with long average stays that would not show up until after discharge in areas with shorter stays.

No significant relationship was found between deaths within a year of surgery and the number of persons with one readmission or more with an event per 1,000 discharged alive.

Correlation coefficients were also computed between ALOS and rates of events in the index stay and between ALOS and rates of readmissions. This was done to examine the hypothesis that areas with high ALOS might have high rates of events within the index stay because of the longer time for

adverse events to appear. Areas with high ALOS might also have lower rates of readmissions because more problems would be taken care of in the index stay. For replacement of the head of the femur, the correlation between ALOS and the rate of adverse events in the index stay was positive and significant at the 0.05 level ($r = 0.30$,

$n = 331$); the correlation between ALOS and the rate of readmissions with an adverse event was negative and significant ($r = -0.32$, $n = 145$). These correlation coefficients are consistent with the hypotheses just stated. The correlation between ALOS and the rate of readmissions within 90 days for any reason was not significant, however.

Table 1. Replacement of the head of the femur: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986 index stays
(Number of procedures: 43,063. Number of live discharges: 41,289. Replacement of the head of the femur must include ICD-9-CM principal procedure code 81.61 or 81.62 and principal diagnosis code 820.0 or 820.8. Stays are excluded if the following diagnosis codes are in any position: 733.42, 733.40, or 140-208.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmis- sions within(1)		
Total	--	--	--	445.28	73.14
1. Noninfectious problems related to the hip	--	--	--	5.92	31.95
Mechanical complication of internal orthopedic device, implant, and graft--early	996.4	No	90 days	--	13.73
Mechanical complication of internal orthopedic device, implant, and graft--late	996.4	No	91 days- 1 year	--	9.01
Other complications of internal prosthetic device, implant, and graft	996.7	Yes	30 days	2.14	0.56
Dislocation of hip	835	Yes	1 year	1.63	1.31
Fracture of shaft or unspecified part of femur, closed	821.0	Yes	1 year	2.16	7.34
2. Infectious complications related to surgery	--	--	--	210.97	21.26
Other bacterial pneumonia	482	Yes	30 days	5.55	1.57
Bronchopneumonia, organism unspecified	485	Yes	30 days	1.35	0.39
Pneumonia, organism unspecified	486	Yes	30 days	21.34	3.54
Respiratory complications	997.3	Yes	30 days	16.26	0.22
Postoperative infection	998.5	Yes	30 days	12.01	2.98
Acute cystitis	595.0	Yes	30 days	1.16	0.07
Cystitis, unspecified	595.9	Yes	30 days	3.07	0.12
Urinary tract infection, site not specified	599.0	Yes	30 days	139.73	3.63
Acute pyelonephritis	590.1	Yes	30 days	0.33	0.31
Other pyelonephritis or pyonephrosis, not specified as acute or chronic	590.8	Yes	30 days	0.35	0.17
Infection of kidney, unspecified	590.9	Yes	30 days	0.00	0.00
Septicemia	038	Yes	30 days	5.50	1.99
Other cellulitis and abscess, unspecified site	682.9	Yes	30 days	0.05	0.00
Other cellulitis and abscess, leg, except foot	682.6	Yes	30 days	1.18	0.19
Other infection	999.3	Yes	30 days	0.14	0.00
Infection and inflammatory reaction due to internal prosthetic device, implant, and graft	996.6	No	1 year	--	4.94
Disruption of operation wound	998.3	Yes	21 days	2.97	1.14

(1) Measured from date of surgery to date of readmission.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1. Replacement of the head of the femur: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986 index stays
(Number of procedures: 43,063. Number of live discharges: 41,289. Replacement of the head of the femur must include ICD-9-CM principal procedure code 81.61 or 81.62 and principal diagnosis code 820.0 or 820.8. Stays are excluded if the following diagnosis codes are in any position: 733.42, 733.40, or 140-208.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmissions within(1)		
3. General surgical complications	--	--	--	228.25	19.93
Peripheral vascular complications	997.2	Yes	30 days	3.25	0.53
Acute reaction to foreign substance accidentally left during a procedure	998.7	Yes	1 year	0.02	0.00
Acute edema of lung, unspecified	518.4	Yes	30 days	0.95	0.07
Pulmonary insufficiency following trauma and surgery	518.5	Yes	30 days	1.60	0.00
Retention of urine	788.2	Yes	30 days	15.09	0.24
Incontinence of urine	788.3	Yes	30 days	4.53	0.00
Other vascular complications	999.2	Yes	30 days	0.35	0.02
Foreign body accidentally left during a procedure	998.4	Yes	1 year	0.12	0.00
Other specified complications of procedures, not elsewhere classified	998.8	Yes	30 days	12.08	0.10
Unspecified complication of procedure, not elsewhere classified	998.9	Yes	30 days	0.30	0.00
Postoperative shock	998.0	Yes	30 days	1.09	0.02
Accidental puncture or laceration during a procedure	998.2	Yes	30 days	0.30	0.00
Hemorrhage or hematoma complicating a procedure	998.1	Yes	30 days	10.10	0.97
Iron deficiency anemia, unspecified	280.9	Yes	30 days	8.24	0.05
Trigonitis	595.3	Yes	30 days	0.12	0.00
Pulmonary embolism and infarction	415.1	Yes	30 days	11.24	2.49
Phlebitis and thrombophlebitis	451	Yes	30 days	2.62	1.55
Other venous embolism and thrombosis	453	Yes	30 days	1.76	1.31
Acute myocardial infarction	410	Yes	30 days	10.68	1.02
Acute, but ill-defined, cerebrovascular disease	436	Yes	30 days	7.31	0.94
Decubitus ulcer	707.0	Yes	180 days	16.07	6.73
Iron deficiency anemia, secondary to inadequate dietary iron intake	280.1	Yes	30 days	0.05	0.00
Acute posthemorrhagic anemia	285.1	Yes	30 days	38.01	0.00
Congestive heart failure	428.0	Yes	30 days	75.40	2.03
Subarachnoid hemorrhage	430	Yes	30 days	0.05	0.05
Intracerebral hemorrhage	431	Yes	30 days	0.23	0.05
Other and unspecified intracranial hemorrhage	432	Yes	30 days	0.21	0.05
Occlusion of cerebral arteries	434	Yes	30 days	6.46	1.70
4. Other events	--	--	--	--	--
Mononeuritis of lower limb (lesion of sciatic nerve)	355.0	Yes	7 days	0.14	0.00

(1) Measured from date of surgery to date of readmission.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986 index stays

Race, sex, and age	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
All persons(2)	43,063	1.61	14.52	345	212	41,289
65-74 years	8,451	0.52	14.18	271	122	8,261
75-84 years	19,410	2.42	14.46	335	189	18,742
85 years or over	15,202	6.04	14.80	400	291	14,286
Men	8,117	0.76	15.46	365	345	7,451
65-74 years	1,774	0.25	15.67	301	212	1,703
75-84 years	3,653	1.25	15.41	356	328	3,385
85 years or over	2,690	3.94	15.38	419	456	2,363
Women	34,946	2.18	14.31	341	181	33,838
65-74 years	6,677	0.73	13.78	262	99	6,558
75-84 years	15,757	3.08	14.24	330	156	15,357
85 years or over	12,512	6.82	14.67	396	256	11,923
White	40,176	1.70	14.44	345	210	38,546
65-74 years	7,809	0.55	14.07	269	119	7,635
75-84 years	18,137	2.54	14.39	334	187	17,530
85 years or over	14,230	6.37	14.71	399	290	13,381
Men	7,456	0.79	15.27	361	345	6,847
65-74 years	1,612	0.26	15.42	298	210	1,547
75-84 years	3,350	1.30	15.18	351	329	3,107
85 years or over	2,494	4.15	15.28	417	454	2,193
Women	32,720	2.31	14.25	341	180	31,699
65-74 years	6,197	0.78	13.72	261	96	6,088
75-84 years	14,787	3.24	14.21	331	155	14,423
85 years or over	11,736	7.19	14.59	395	255	11,188
Black	1,437	0.72	16.67	360	276	1,350
65-74 years	305	0.25	17.11	305	193	293
75-84 years	597	1.02	16.09	348	246	563
85 years or over	535	2.74	17.06	406	357	494
Men	400	0.50	17.62	400	358	359
65-74 years	101	0.19	19.23	317	238	95
75-84 years	170	0.79	16.78	424	306	155
85 years or over	129	2.22	17.48	434	519	109
Women	1,037	0.86	16.30	345	245	991
65-74 years	204	0.29	16.06	299	172	198
75-84 years	427	1.16	15.82	319	222	408
85 years or over	406	2.95	16.92	397	305	385

(1)Includes "other events" category.

(2)Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986 index stays

Race, sex, and age	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious complications related to surgery	General surgical complications
All persons(2)	182	66	73	32	21	20
65-74 years	156	62	71	36	18	16
75-84 years	185	68	75	33	22	20
85 years or over	194	66	72	29	22	21
Men	240	82	92	34	36	22
65-74 years	203	75	86	39	27	21
75-84 years	243	85	94	35	37	22
85 years or over	262	84	94	30	41	22
Women	170	62	69	31	18	20
65-74 years	144	59	67	36	16	15
75-84 years	172	64	71	32	19	20
85 years or over	181	62	67	28	18	21
White	181	66	73	32	21	19
65-74 years	155	63	72	36	19	17
75-84 years	185	68	75	33	22	20
85 years or over	192	65	70	29	22	20
Men	240	83	93	34	37	21
65-74 years	200	73	84	35	29	20
75-84 years	246	88	96	36	38	22
85 years or over	261	84	94	31	41	22
Women	168	62	69	32	18	19
65-74 years	143	60	68	36	16	16
75-84 years	171	63	71	32	19	19
85 years or over	178	61	66	28	18	20
Black	239	84	93	30	26	37
65-74 years	215	65	82	41	24	17
75-84 years	195	67	75	21	20	34
85 years or over	302	115	121	34	34	53
Men	259	72	86	36	19	31
65-74 years	274	105	137	84	11	42
75-84 years	219	52	65	26	19	19
85 years or over	303	73	73	9	28	37
Women	231	89	96	28	28	39
65-74 years	187	45	56	20	30	5
75-84 years	186	74	78	20	20	39
85 years or over	301	127	135	42	36	57

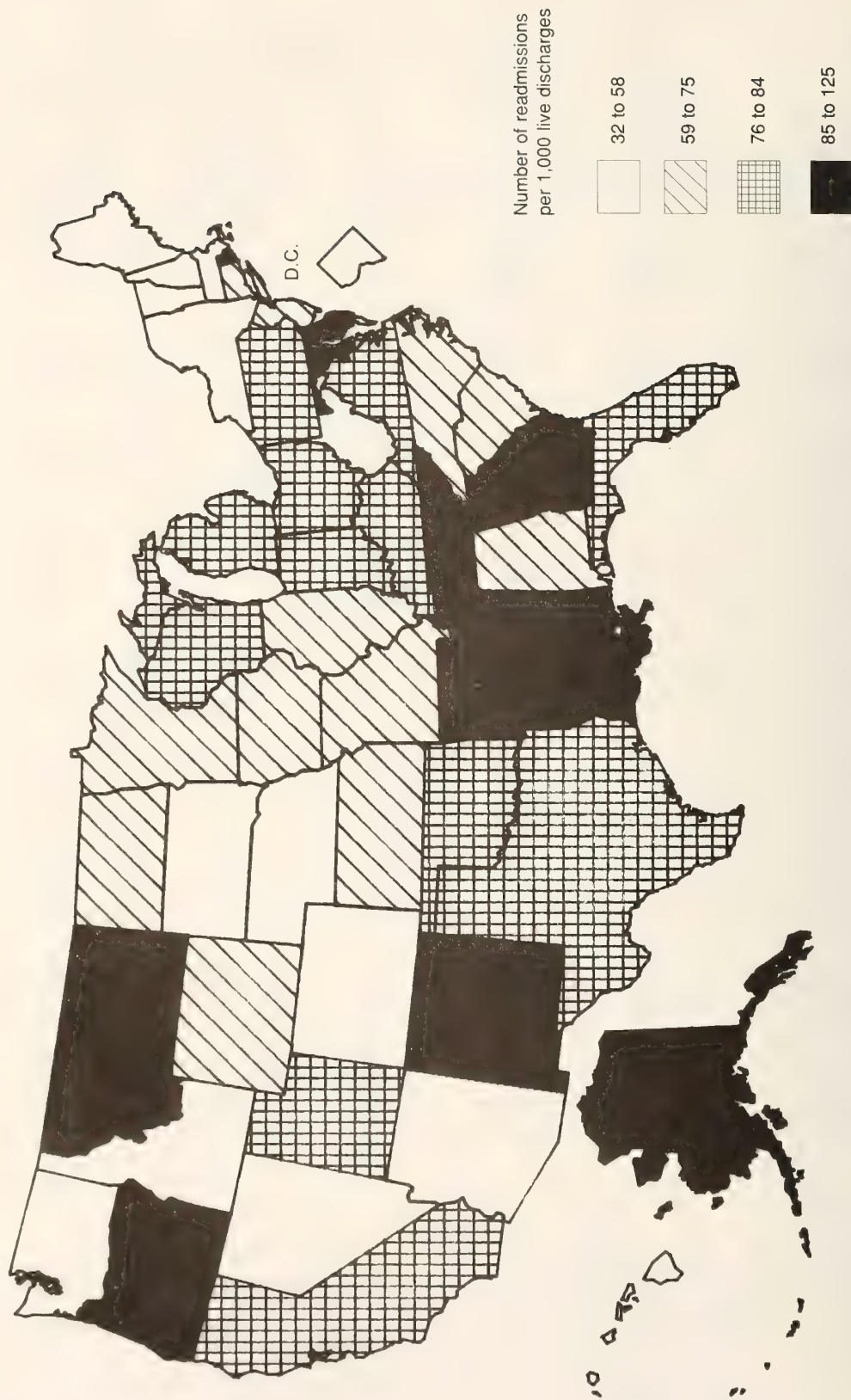
(1)Includes "other events" category.

(2)Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

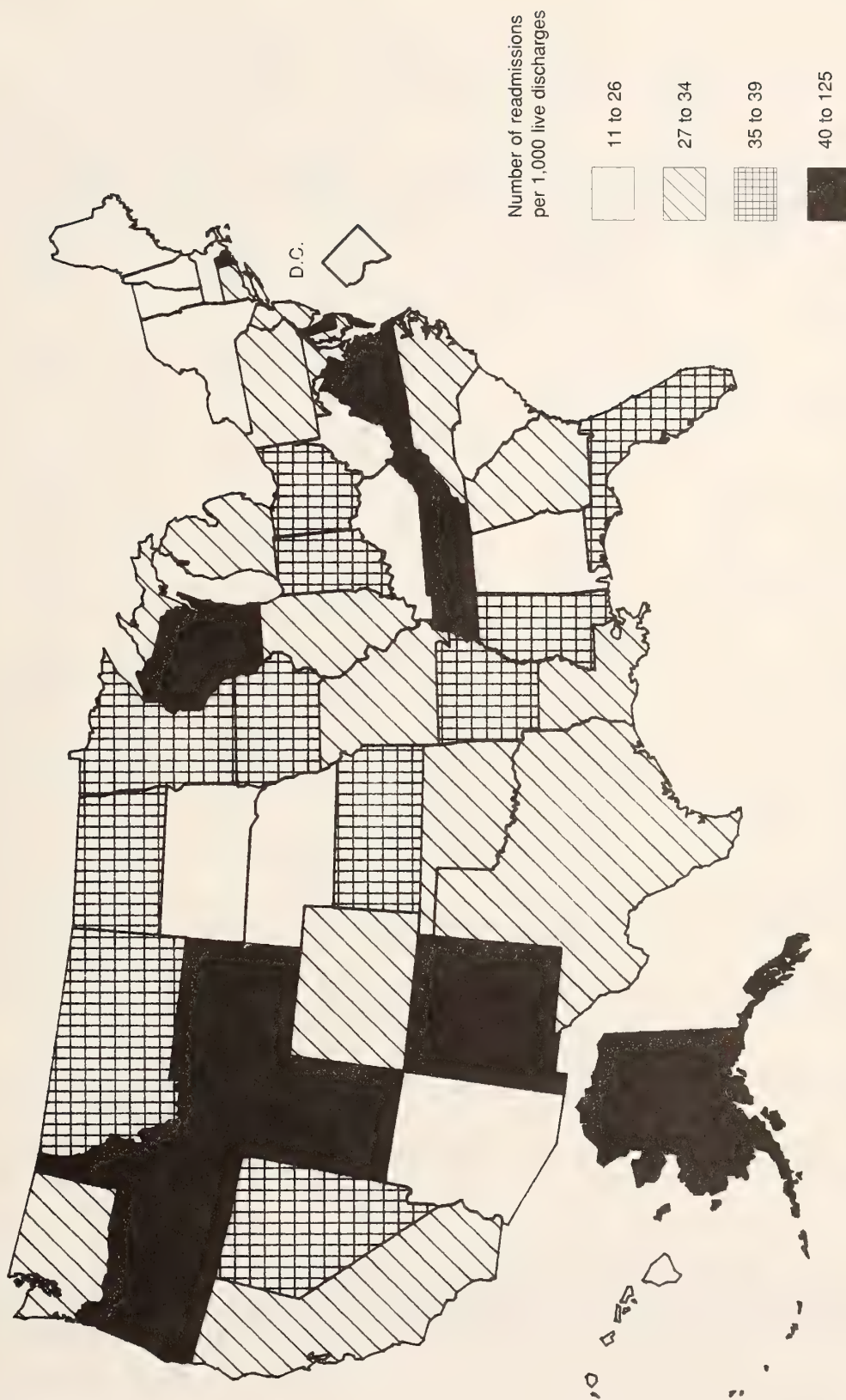
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 1. Replacement of the head of the femur: Number of readmissions with an adverse event per 1,000 live discharges for aged Medicare enrollees, by State: 1986 index stays



NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy. Data from the Medicare Statistical System.

Figure 2. Replacement of the head of the femur: Number of readmissions with an adverse event in Event Group 1 (noninfectious problems related to the hip) per 1,000 live discharges for aged Medicare enrollees, by State: 1986 index stays



NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
United States	43,063	1.61	14.52	345	212	41,289
Metropolitan	29,963	1.55--	15.20	352+	215	28,712
Rural	13,100	1.79++	12.97	330--	205-	12,577
Northeast	8,488	1.35--	19.45	383++	216	8,054
Metropolitan	7,382	1.33--	19.73	386++	217	7,010
Rural	1,106	1.55	17.56	369	212	1,044
New England	2,400	1.53--	17.56	363	211	2,292
Metropolitan	2,024	1.51--	17.98	358	211	1,935
Rural	376	1.66	15.30	391	207	357
Maine	230	1.50	15.25	374	200	220
Metropolitan	129	1.57	15.83	419	225	123
Rural	101	1.43	14.51	317	168	97
New Hampshire	200	1.74	15.68	435+	230	191
Metropolitan	128	1.73	15.73	406	242	120
Rural	72	1.77	15.57	486+	208	71
Vermont	101	1.61	15.66	436	158	95
Metropolitan	16	1.54	18.38	563	250	15
Rural	85	1.62	15.15	412	141	80
Massachusetts	1,133	1.60	19.23	375+	214	1,077
Metropolitan	1,042	1.58	19.59	370	207	993
Rural	91	1.80	15.14	429	297	84
Rhode Island	148	1.12--	17.33	264-	216	141
Metropolitan	148	1.12--	17.33	264-	216	141
Rural	0	0.00	0.00	0	0	0
Connecticut	588	1.48-	16.28	323	209	568
Metropolitan	561	1.46-	16.18	328	207	543
Rural	27	2.23	18.44	222	259	25
Middle Atlantic	6,088	1.29--	20.19	392++	218	5,762
Metropolitan	5,358	1.27--	20.39	396++	219	5,075
Rural	730	1.50-	18.72	358	214	687
New York	2,724	1.27--	24.06	425++	209	2,536
Metropolitan	2,374	1.23--	24.18	431++	207	2,216
Rural	350	1.58	23.21	386	220	320
New Jersey	1,238	1.35--	20.87	434++	221	1,186
Metropolitan	1,238	1.35--	20.87	434++	221	1,186
Rural	0	0.00	0.00	0	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
United States	182	66	73	32	21	20
Metropolitan	180	65	72	32	21	19
Rural	187	67	75	31	22	22
Northeast	175	58--	64--	28	19	17
Metropolitan	176	57--	64--	28	19	17
Rural	169	60	64	28	17	19
New England	167-	54--	57--	25	17	14-
Metropolitan	169	56-	60-	27	19	14-
Rural	154	42-	42--	17-	8	17
Maine	127-	41	41-	23	9	9
Metropolitan	146	49	49	33	16	0
Rural	103-	31	31	10	0	21
New Hampshire	178	52	52	16	16	21
Metropolitan	125	42	42	0-	25	17
Rural	268	70	70	42	0	28
Vermont	137	32	32	11	11	11
Metropolitan	200	0	0	0	0	0
Rural	125	38	38	13	13	13
Massachusetts	177	53	57-	20-	18	19
Metropolitan	182	54	58	21-	18	19
Rural	119	36	36	12	12	12
Rhode Island	149	85	92	64	21	7
Metropolitan	149	85	92	64	21	7
Rural	0	0	0	0	0	0
Connecticut	167	56	62	32	21	9--
Metropolitan	164	57	63	33	20	9-
Rural	240	40	40	0	40	0
Middle Atlantic	178	60-	67	30	19	18
Metropolitan	179	58-	65	29	19	18
Rural	176	70	76	33	22	20
New York	157--	52--	58--	26	21	11--
Metropolitan	157--	51--	58--	25	22	10--
Rural	159	56	63	28	16	19
New Jersey	194	57	65	30	15	20
Metropolitan	194	57	65	30	15	20
Rural	0	0	0	0	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay				Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures		
Pennsylvania	2,126	1.29--	14.85	324-	229	2,040
Metropolitan	1,746	1.26--	14.90	322-	233+	1,673
Rural	380	1.43-	14.58	332	208	367
North Central	12,401	1.80++	13.42	353	212	11,925
Metropolitan	7,594	1.73++	14.24	358+	220	7,288
Rural	4,807	1.92++	12.13	345	200-	4,637
East North Central	7,763	1.64	14.15	353	217	7,444
Metropolitan	5,444	1.58	14.75	362+	222	5,213
Rural	2,319	1.80++	12.73	333	207	2,231
Ohio	1,988	1.57	13.86	367+	213	1,901
Metropolitan	1,527	1.55	14.29	366	213	1,462
Rural	461	1.67	12.43	371	210	439
Indiana	1,176	1.89++	13.08	268--	220	1,133
Metropolitan	726	1.82++	13.52	267--	234	699
Rural	450	2.01++	12.38	269--	198	434
Illinois	2,281	1.80++	15.40	405++	223	2,198
Metropolitan	1,597	1.68	16.14	421++	227	1,534
Rural	684	2.19++	13.67	367	213	664
Michigan	1,225	1.25--	14.23	318-	225	1,164
Metropolitan	933	1.25--	14.68	325	233	888
Rural	292	1.23--	12.79	295	202	276
Wisconsin	1,093	1.79++	13.14	352	201	1,048
Metropolitan	661	1.79+	13.93	366	200	630
Rural	432	1.79+	11.92	331	204	418
West North Central	4,638	2.15++	12.20	353	204	4,481
Metropolitan	2,150	2.27++	12.93	349	217	2,075
Rural	2,488	2.05++	11.58	357	193-	2,406
Minnesota	853	2.15++	11.15	335	213	823
Metropolitan	471	2.51++	10.82	331	223	453
Rural	382	1.82+	11.57	340	202	370
Iowa	801	1.98++	10.38	361	212	767
Metropolitan	269	1.97++	11.65	331	227	258
Rural	532	1.99++	9.73	376	205	509
Missouri	1,540	2.35++	13.66	368	212	1,492
Metropolitan	899	2.35++	14.34	362	228	868
Rural	641	2.35++	12.71	376	190	624

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious complications related to surgery	General surgical complications
Pennsylvania	195	70	78	34	18	25
Metropolitan	196	68	76	33	16	26
Rural	191	82	87	38	27	22
North Central	181	65	72	33	19	19
Metropolitan	184	66	73	35	20	18
Rural	176	62	70	31	18	21
East North Central	182	68	75	35	21	19
Metropolitan	185	68	75	36	22	17
Rural	173	67	76	31	20	24
Ohio	180	71	78	35	25	18
Metropolitan	185	73	80	37	27	16
Rural	162	64	71	27	21	23
Indiana	167	67	79	35	29	14
Metropolitan	186	69	83	43	30	10-
Rural	136--	65	71	23	28	21
Illinois	198	63	70	31	17	21
Metropolitan	192	63	69	33	18	18
Rural	211	65	71	26	17	29
Michigan	172	70	76	34	21	22
Metropolitan	172	70	74	30	21	23
Rural	170	72	83	43	18	22
Wisconsin	177	70	79	42	16	21
Metropolitan	186	67	73	40	14	19
Rural	165	74	89	45	19	24
West North Central	180	60	65	32	15--	18
Metropolitan	182	62	67	34	14-	18
Rural	178	57	64	30	16-	18
Minnesota	170	70	75	35	18	22
Metropolitan	161	68	75	44	18	13
Rural	181	73	76	24	19	32
Iowa	154-	64	73	38	17	18
Metropolitan	167	81	89	50	19	19
Rural	147-	55	65	31	16	18
Missouri	197	58	61	27	13-	20
Metropolitan	203	58	60	24	12-	24
Rural	189	59	63	32	16	14

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
North Dakota	176	2.06++	12.34	307	148-	170
Metropolitan	41	1.79	14.15	317	122	41
Rural	135	2.16++	11.79	304	156	129
South Dakota	194	2.02++	12.59	263--	191	190
Metropolitan	43	2.11	13.74	302	186	42
Rural	151	1.99+	12.26	252--	192	148
Nebraska	448	2.13++	11.29	342	170-	434
Metropolitan	139	1.98+	11.78	324	158	133
Rural	309	2.21++	11.07	350	175	301
Kansas	626	2.03++	12.88	383+	204	605
Metropolitan	288	2.33++	13.42	382	208	280
Rural	338	1.84+	12.41	385	201	325
South	14,930	1.66++	13.95	322--	212	14,329
Metropolitan	9,116	1.58	14.39	330--	219	8,754
Rural	5,814	1.80++	13.25	310--	202	5,575
South Atlantic	6,913	1.48--	14.60	322--	214	6,656
Metropolitan	4,683	1.41--	14.75	325--	218	4,513
Rural	2,230	1.65	14.31	316--	206	2,143
Delaware	99	1.41	12.72	212--	141-	96
Metropolitan	68	1.53	12.82	191--	176	66
Rural	31	1.20	12.48	258	65	30
Maryland	504	1.15--	16.80	367	240	492
Metropolitan	435	1.10--	17.04	382	237	424
Rural	69	1.66	15.32	275	261	68
Dist. of Columbia	85	1.28-	16.67	424	129-	84
Metropolitan	85	1.28-	16.67	424	129-	84
Rural	0	0.00	0.00	0	0	0
Virginia	931	1.65	15.10	279--	176--	901
Metropolitan	538	1.52	15.12	245--	169--	526
Rural	393	1.87++	15.08	326	186	375
West Virginia	466	1.91++	14.67	283--	232	444
Metropolitan	180	1.98+	14.81	267-	222	171
Rural	286	1.86+	14.58	294	238	273
North Carolina	1,196	1.74+	14.70	358	207	1,147
Metropolitan	647	1.87++	15.21	374	201	618
Rural	549	1.60	14.10	339	213	529

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious complications related to surgery	General surgical complications
North Dakota	206	53	71	35	18	18
Metropolitan	146	24	24	0	0	24
Rural	225	62	85	47	23	16
South Dakota	163	32--	32--	21	5	5
Metropolitan	143	48	48	48	0	0
Rural	169	27	27--	14	7	7
Nebraska	143-	46-	51	25	9	16
Metropolitan	143	45	45	23	15	8
Rural	143-	47	53	27	7	20
Kansas	208	63	71	36	20	15
Metropolitan	196	64	71	39	18	14
Rural	218	62	71	34	22	15
South	191++	72++	80+	31	25+	24++
Metropolitan	182	70	78	31	23	23+
Rural	205++	74+	82+	31	27+	24
South Atlantic	193+	69	77	32	24	20
Metropolitan	188	70	77	33	24	20
Rural	204+	67	75	31	24	21
Delaware	135	94	94	42	31	21
Metropolitan	136	91	91	45	30	15
Rural	133	100	100	33	33	33
Maryland	215	83	87	33	33	22
Metropolitan	205	78	80	28	35	17
Rural	279	118	132	59	15	59
Dist. of Columbia	119	36	36	12	24	0
Metropolitan	119	36	36	12	24	0
Rural	0	0	0	0	0	0
Virginia	209	70	80	42	23	14
Metropolitan	198	67	76	42	17	17
Rural	224	75	85	43	32	11
West Virginia	205	41--	41--	16--	14	11
Metropolitan	158	35-	35-	12	18	6
Rural	234+	44	44-	18	11	15
North Carolina	153--	65	70	30	20	20
Metropolitan	144--	65	66	23	18	26
Rural	164	66	74	38	23	13

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
South Carolina	517	1.57	16.50	309	221	494
Metropolitan	311	1.66	16.19	309	235	294
Rural	206	1.45	16.97	311	199	200
Georgia	1,013	1.80++	13.34	324	223	973
Metropolitan	568	1.81++	13.64	333	239	547
Rural	445	1.79+	12.96	312	202	426
Florida	2,102	1.23--	13.93	322-	227	2,025
Metropolitan	1,851	1.22--	14.01	324	231	1,783
Rural	251	1.31--	13.39	307	199	242
East South Central	3,187	1.85++	13.97	306--	215	3,032
Metropolitan	1,530	1.75++	14.85	315-	222	1,454
Rural	1,657	1.94++	13.16	298--	208	1,578
Kentucky	846	2.00++	13.94	301--	196	807
Metropolitan	300	1.64	14.67	300	180	292
Rural	546	2.28++	13.53	302-	205	515
Tennessee	1,191	2.16++	13.88	278--	226	1,137
Metropolitan	708	2.07++	14.77	281--	229	676
Rural	483	2.32++	12.58	273--	222	461
Alabama	715	1.54	14.35	379	220	674
Metropolitan	415	1.47	15.11	386	241	384
Rural	300	1.66	13.30	370	190	290
Mississippi	435	1.50	13.69	271--	211	414
Metropolitan	107	1.61	14.90	308	224	102
Rural	328	1.47	13.29	259--	207	312
West South Central	4,830	1.87++	12.99	334	208	4,641
Metropolitan	2,903	1.85++	13.59	346	217	2,787
Rural	1,927	1.90++	12.09	314--	194-	1,854
Arkansas	610	1.90++	12.85	321	213	588
Metropolitan	214	2.12++	14.48	364	238	207
Rural	396	1.79+	11.97	298-	199	381
Louisiana	647	1.56	13.30	264--	195	619
Metropolitan	432	1.61	14.15	273--	190	418
Rural	215	1.45	11.59	247--	205	201
Oklahoma	799	2.11++	12.20	347	212	772
Metropolitan	395	2.19++	12.64	344	241	380
Rural	404	2.03++	11.77	349	183	392

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious complications related to surgery	General surgical complications
South Carolina	188	49	59	26	22	10
Metropolitan	194	54	68	34	31	3-
Rural	180	40	45	15	10	20
Georgia	228++	90++	105++	31	36+	38++
Metropolitan	239++	99++	113+	38	42+	33
Rural	214	80	94	21	28	45++
Florida	191	68	76	36	21	20
Metropolitan	187	68	77	36	19	22
Rural	215	62	70	33	33	4
East South Central	194	75	81	30	22	29++
Metropolitan	173	73	80	33	20	27
Rural	213++	77	82	27	24	31+
Kentucky	188	73	78	26	24	29
Metropolitan	158	51	51	17	14	21
Rural	206	85	93	31	29	33
Tennessee	208+	82+	91	40	20	32+
Metropolitan	194	90+	102+	50	22	30
Rural	230+	69	76	24	17	35
Alabama	174	61	62	13--	19	30
Metropolitan	143-	57	60	16-	13	31
Rural	214	66	66	10-	28	28
Mississippi	196	82	89	39	29	22
Metropolitan	186	78	88	29	49	10
Rural	199	83	90	42	22	26
West South Central	187	74+	83+	30	28+	25+
Metropolitan	178	70	78	28	24	27+
Rural	199	80+	90+	34	33++	23
Arkansas	216+	80	90	36	37	17
Metropolitan	227	77	77	14	34	29
Rural	210	81	97	47	39+	10
Louisiana	202	84	94	32	27	34
Metropolitan	194	81	93	31	31	31
Rural	219	90	95	35	20	40
Oklahoma	193	66	80	31	30	19
Metropolitan	192	71	82	32	24	26
Rural	194	61	79	31	36	13

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Texas	2,774	1.89++	13.18	349	209	2,662
Metropolitan	1,862	1.82++	13.55	361	216	1,782
Rural	912	2.04++	12.41	322	194	880
West	7,244	1.60	11.82	334-	205	6,981
Metropolitan	5,871	1.61	12.02	334	200-	5,660
Rural	1,373	1.53-	10.99	332	225	1,321
Mountain	1,933	1.61	11.87	326	213	1,867
Metropolitan	1,149	1.59	12.23	315-	206	1,113
Rural	784	1.63	11.35	343	223	754
Montana	219	2.25++	12.80	352	196	209
Metropolitan	28	1.32	13.39	214	36-	28
Rural	191	2.51++	12.72	372	220	181
Idaho	157	1.43	9.95	363	217	152
Metropolitan	27	1.46	9.22	148	185	26
Rural	130	1.42	10.10	408	223	126
Wyoming	64	1.51	15.55	438	219	63
Metropolitan	24	1.96	16.96	583	125	24
Rural	40	1.33	14.70	350	275	39
Colorado	449	1.68	11.61	341	200	435
Metropolitan	354	1.75	12.15	347	201	344
Rural	95	1.46	9.58	316	200	91
New Mexico	216	1.72	12.95	282-	236	205
Metropolitan	83	1.61	13.20	217--	217	78
Rural	133	1.80	12.79	323	248	127
Arizona	588	1.69	12.18	304-	194	573
Metropolitan	458	1.78+	12.74	297-	197	446
Rural	130	1.43	10.19	331	185	127
Utah	162	1.26--	9.91	377	272	154
Metropolitan	118	1.26--	9.98	415	288	112
Rural	44	1.25	9.73	273	227	42
Nevada	78	0.95--	10.32	192--	282	76
Metropolitan	57	0.89--	10.58	211-	263	55
Rural	21	1.21	9.62	143	333	21

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Texas	175	73	80	28	25	26
Metropolitan	166	66	74	27	21	25
Rural	192	86+	91	30	33	28
West	176	65	73	35	21	17
Metropolitan	177	66	73	35	22	17
Rural	171	62	73	37	18	17
Mountain	192	58	67	35	19	13--
Metropolitan	192	55	64	33	21	10--
Rural	191	62	72	37	17	17
Montana	206	91	105	38	57++	10
Metropolitan	179	107	107	36	71	0
Rural	210	88	105	39	55+	11
Idaho	138	46	53	46	0	7
Metropolitan	154	38	38	38	0	0
Rural	135	48	56	48	0	8
Wyoming	175	48	63	48	16	0
Metropolitan	167	42	42	0	42	0
Rural	179	51	77	77	0	0
Colorado	228+	46-	55	32	16	7
Metropolitan	250++	49	61	35	20	6
Rural	143	33	33	22	0	11
New Mexico	273++	78	98	54	10	34
Metropolitan	256	115	167+	141++	13	13
Rural	283+	55	55	0-	8	47
Arizona	155	49	52-	21	19	12
Metropolitan	150	49	52	18-	20	13
Rural	173	47	55	31	16	8
Utah	182	71	84	45	19	19
Metropolitan	188	54	63	27	27	9
Rural	167	119	143	95	0	48
Nevada	145	53	53	39	0	13
Metropolitan	127	36	36	18	0	18
Rural	190	95	95	95	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Pacific	5,311	1.59	11.81	336	202	5,114
Metropolitan	4,722	1.62	11.97	339	198-	4,547
Rural	589	1.41--	10.50	317	228	567
Washington	821	1.78++	10.01	345	206	797
Metropolitan	629	1.81++	9.99	351	205	612
Rural	192	1.67	10.06	323	208	185
Oregon	384	1.26--	10.48	286-	206	374
Metropolitan	241	1.33--	10.64	286-	195	232
Rural	143	1.17--	10.22	287	224	142
California	4,022	1.62	12.22	337	200	3,866
Metropolitan	3,794	1.63	12.31	338	197-	3,650
Rural	228	1.55	10.61	320	246	216
Alaska	17	1.04-	15.82	353	176	16
Metropolitan	3	0.53-	17.67	333	333	3
Rural	14	1.31	15.43	357	143	13
Hawaii	67	0.84--	15.64	448	239	61
Metropolitan	55	0.95--	16.16	436	218	50
Rural	12	0.53--	13.25	500	333	11

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Pacific	170-	68	75	35	22	18
Metropolitan	173	69	75	35	22	18
Rural	145-	62	74	37	19	18
Washington	151-	55	58	30	11-	16
Metropolitan	163	57	59	33	10--	16
Rural	108--	49	54	22	16	16
Oregon	155	86	102	61+	35	5-
Metropolitan	151	95	121	78++	43	0-
Rural	162	70	70	35	21	14
California	176	69	77	34	23	20
Metropolitan	177	69	76	33	23	20
Rural	162	69	93	46	23	23
Alaska	63	63	125	125	0	0
Metropolitan	0	0	0	0	0	0
Rural	77	77	154	154	0	0
Hawaii	148	33	33	16	0	16
Metropolitan	120	40	40	20	0	20
Rural	273	0	0	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
United States	43,063	1.61	14.52	345	212	41,289
Northeast	8,488	1.35--	19.45	383++	216	8,054
New England	2,400	1.53--	17.56	363	211	2,292
Maine	230	1.50	15.25	374	200	220
Bangor	28	1.75	12.32	536	286	27
Lewiston-Auburn	26	1.93	14.23	385	192	24
Portland	75	1.42	17.69	387	213	72
New Hampshire	200	1.74	15.68	435+	230	191
Manchester	69	1.55	15.77	420	261	63
Portsmouth	59	1.98	15.69	390	220	57
Vermont	101	1.61	15.66	436	158	95
Burlington	16	1.54	18.38	563	250	15
Massachusetts	1,133	1.60	19.23	375+	214	1,077
Boston	705	1.64	17.67	380	218	672
New Bedford	76	1.16--	37.30	329	263	72
Pittsfield	30	1.48	16.33	400	233	30
Springfield	129	1.79	19.70	349	124--	127
Worcester	102	1.43	20.48	353	186	92
Rhode Island	148	1.12--	17.33	264-	216	141
Providence	148	1.12--	17.33	264-	216	141
Connecticut	588	1.48-	16.28	323	209	568
Bridgeport	137	1.41	19.74	380	197	131
Hartford	233	1.48	15.02	318	232	228
New Haven	162	1.57	15.28	315	179	157
New London	29	1.05--	13.66	241	207	27

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious complications related to surgery	General surgical complications
United States	182	66	73	32	21	20
Northeast	175	58--	64--	28	19	17
New England	167-	54--	57--	25	17	14-
Maine	127-	41	41-	23	9	9
Bangor	185	74	74	37	37	0
Lewiston-Auburn	125	42	42	42	0	0
Portland	139	42	42	28	14	0
New Hampshire	178	52	52	16	16	21
Manchester	159	48	48	0	16	32
Portsmouth	88-	35	35	0	35	0
Vermont	137	32	32	11	11	11
Burlington	200	0	0	0	0	0
Massachusetts	177	53	57-	20-	18	19
Boston	189	54	57	18--	18	21
New Bedford	139	42	42	14	14	14
Pittsfield	200	100	133	33	100	0
Springfield	165	71	71	39	16	16
Worcester	185	33	43	22	0	22
Rhode Island	149	85	92	64	21	7
Providence	149	85	92	64	21	7
Connecticut	167	56	62	32	21	9--
Bridgeport	145	31	46	38	0	8
Hartford	197	83	88	53	26	9
New Haven	121-	45	45	6	32	6
New London	222	37	37	0	0	37

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Middle Atlantic	6,088	1.29--	20.19	392++	218	5,762
New York	2,724	1.27--	24.06	425++	209	2,536
Albany	189	1.64	37.66	513++	206	169
Binghamton	71	2.00	19.35	324	155	70
Buffalo	100	0.74--	22.81	540++	310+	89
Elmira	23	1.68	23.17	304	130	22
Glens Falls	31	2.04	19.45	419	32-	31
Nassau-Suffolk	397	1.34--	24.49	428++	224	375
New York	1,126	1.13--	23.06	424++	198	1,053
Niagara Falls	18	0.58--	17.50	389	278	15
Orange County	31	1.02--	22.26	484	161	30
Poughkeepsie	46	1.65	20.89	391	196	43
Rochester	131	1.28--	19.50	389	206	123
Syracuse	119	1.58	21.52	387	235	110
Utica-Rome	92	1.97	29.57	500++	228	86
New Jersey	1,238	1.35--	20.87	434++	221	1,186
Atlantic City	60	1.29	18.12	467	250	56
Bergen-Passaic	265	1.55	21.89	381	215	254
Jersey City	54	0.84--	27.87	519+	259	53
Middlesex	120	1.32-	21.90	492++	208	116
Monmouth-Ocean	227	1.47	20.70	357	203	218
Newark	247	1.17--	22.66	482++	202	237
Trenton	66	1.71	14.89	697++	288	64
Vineland	23	1.40	16.91	478	217	22
Pennsylvania	2,126	1.29--	14.85	324-	229	2,040
Allentown	96	1.01--	15.77	385	302	95
Altoona	18	0.87--	14.39	500	389	15
Beaver County	46	1.67	12.35	478	283	42
Erie	36	1.02--	12.92	361	250	35
Harrisburg	55	0.75--	13.04	473	255	50
Johnstown	41	1.02--	16.07	366	195	40
Lancaster	51	1.06--	13.55	373	392++	48
Philadelphia	799	1.40--	16.37	332	242+	763
Pittsburgh	427	1.32--	14.50	288--	215	411
Reading	69	1.42	13.52	232-	261	66
Scranton	154	1.25--	15.07	260-	136--	152
Sharon	23	1.21	14.26	174	130	23
State College	11	1.10	12.27	273	91	11
Williamsport	31	1.84	12.58	355	226	27
York	59	1.22-	13.81	339	254	55

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Middle Atlantic	178	60-	67	30	19	18
New York	157--	52--	58--	26	21	11--
Albany	118--	36-	36-	18	0	18
Binghamton	114	43	43	14	29	0
Buffalo	213	79	90	22	34	34
Elmira	45	0	0	0	0	0
Glens Falls	290	32	32	32	0	0
Nassau-Suffolk	171	48	61	21	21	19
New York	162	60	66	31	28	7--
Niagara Falls	67	0	0	0	0	0
Orange County	267	133	133	33	100	0
Poughkeepsie	140	70	93	93	0	0
Rochester	163	49	49	24	16	8
Syracuse	118-	27	27	0	9	18
Utica-Rome	93--	0--	0--	0	0	0
New Jersey	194	57	65	30	15	20
Atlantic City	268	89	89	18	36	36
Bergen-Passaic	177	55	59	20	12	28
Jersey City	226	57	57	19	0	38
Middlesex	129	43	43	0-	26	17
Monmouth-Ocean	170	46	50	32	14	5
Newark	211	59	76	30	17	30
Trenton	172	78	94	78	0	16
Vineland	182	45	45	45	0	0
Pennsylvania	195	70	78	34	18	25
Allentown	179	63	63	11	0	53
Altoona	267	133	133	0	67	67
Beaver County	262	95	119	48	0	71
Erie	143	29	57	57	0	0
Harrisburg	180	100	100	40	20	40
Johnstown	275	0	0	0	0	0
Lancaster	125	63	63	21	0	42
Philadelphia	218+	77	87	30	25	31
Pittsburgh	197	61	68	46	10	12
Reading	91--	30	30	15	15	0
Scranton	217	72	79	33	26	20
Sharon	304	87	87	43	0	43
State College	182	0	0	0	0	0
Williamsport	111	0	0	0	0	0
York	91-	73	127	127++	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
North Central	12,401	1.80++	13.42	353	212	11,925
East North Central	7,763	1.64	14.15	353	217	7,444
Ohio	1,988	1.57	13.86	367+	213	1,901
Akron	151	2.00+	13.20	311	225	145
Canton	73	1.41	12.51	384	219	70
Cincinnati	277	1.74	15.40	372	184	264
Cleveland	246	1.01--	14.48	398	195	241
Columbus	236	1.94++	13.64	386	237	229
Dayton	187	1.81	14.34	439+	235	176
Hamilton	49	1.88	12.10	224-	204	47
Lima	29	1.48	14.76	448	241	27
Lorain-Elyria	27	0.99--	13.15	185	222	26
Mansfield	20	1.31	13.10	50-	200	20
Steubenville	36	1.64	15.50	194-	306	33
Toledo	118	1.67	14.10	373	195	113
Youngstown	110	1.59	17.41	291	218	103
Indiana	1,176	1.89++	13.08	268--	220	1,133
Anderson	34	1.98	13.26	353	206	32
Bloomington	22	2.78+	14.41	318	318	21
Elkhart-Goshen	14	0.89--	12.36	286	214	14
Evansville	62	1.80	11.08	161--	290	61
Fort Wayne	85	2.26++	13.53	224--	224	82
Gary-Hammond	96	1.57	15.44	281	281	95
Indianapolis	194	1.64	14.03	289	232	186
Kokomo	19	1.75	11.32	53-	53	18
Lafayette	25	2.23	9.08	160	120	25
Muncie	29	2.11	15.79	414	345	26
South Bend	63	1.90	11.86	206--	175	61
Terre Haute	51	2.60++	13.41	373	157	49
Illinois	2,281	1.80++	15.40	405++	223	2,198
Aurora-Elgin	48	1.55	15.67	333	313	45
Bloomington	37	2.92++	15.32	324	189	35
Champaign	30	2.24	10.97	233	167	30
Chicago	895	1.47--	17.19	455++	239	858
Decatur	46	2.88++	15.28	283	239	45
Joliet	80	2.85++	15.48	488+	263	75
Kankakee	24	2.00	12.79	208	83	23
Lake County	51	1.41	15.63	353	98--	50
Peoria	71	1.63	17.10	268	197	67
Rockford	59	2.08	11.47	373	220	59
Springfield	54	2.18	15.83	481+	333	51

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious complications related to surgery	General surgical complications
North Central	181	65	72	33	19	19
East North Central	182	68	75	35	21	19
Ohio	180	71	78	35	25	18
Akron	228	83	83	34	28	21
Canton	214	143+	157+	71	71+	14
Cincinnati	174	68	76	42	23	11
Cleveland	195	50	54	25	12	17
Columbus	188	70	70	39	26	4
Dayton	125-	85	114	85++	17	11
Hamilton	213	106	106	21	43	43
Lima	74	37	37	0	37	0
Lorain-Elyria	192	77	77	38	0	38
Mansfield	250	0	0	0	0	0
Steubenville	182	91	91	0	61	30
Toledo	248	80	97	18	44	35
Youngstown	136	19	19-	19	0	0
Indiana	167	67	79	35	29	14
Anderson	250	63	156	94	31	31
Bloomington	95	0	0	0	0	0
Elkhart-Goshen	71	0	0	0	0	0
Evansville	279	115	148	33	98++	16
Fort Wayne	159	61	61	37	24	0
Gary-Hammond	221	74	74	11	63+	0
Indianapolis	215	70	86	48	22	16
Kokomo	111	56	56	56	0	0
Lafayette	80	40	40	40	0	0
Muncie	115	0	0	0	0	0
South Bend	115	33	49	49	0	0
Terre Haute	204	143	143	61	41	41
Illinois	198	63	70	31	17	21
Aurora-Elgin	89	0	0	0	0	0
Bloomington	143	0	0	0	0	0
Champaign	167	100	100	33	33	33
Chicago	197	64	73	27	23	23
Decatur	244	67	67	22	22	22
Joliet	200	120	120	80	27	13
Kankakee	217	43	43	0	43	0
Lake County	40-	0	0	0	0	0
Peoria	224	104	119	104+	0	15
Rockford	254	85	85	51	0	34
Springfield	196	59	59	20	20	20

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Michigan	1,225	1.25--	14.23	318-	225	1,164
Ann Arbor	25	1.41	14.16	240	400	22
Battle Creek	24	1.43	20.67	375	125	23
Benton Harbor	25	1.16-	11.64	240	280	23
Detroit	531	1.18--	15.81	328	243	503
Flint	57	1.32	16.65	368	228	53
Grand Rapids	109	1.70	9.57	303	183	105
Jackson	26	1.53	15.88	385	115	26
Kalamazoo	37	1.72	11.62	297	270	35
Lansing	35	1.08--	12.60	543+	257	34
Muskegon	31	1.64	14.23	290	355	31
Saginaw	33	0.78--	13.55	152--	61	33
Wisconsin	1,093	1.79++	13.14	352	201	1,048
Appleton	56	1.62	13.55	321	143	55
Eau Claire	32	1.89	12.38	219	156	32
Green Bay	29	1.51	13.03	379	138	28
Janesville	33	2.00	15.45	303	303	30
Kenosha	15	1.05-	14.33	400	200	13
LaCrosse	16	1.35	14.56	375	438	13
Madison	79	2.57++	10.46	443	89--	78
Milwaukee	297	1.78	15.34	418+	242	280
Racine	33	1.61	16.21	121--	121	32
Sheboygan	23	1.59	12.17	261	87	22
Wausau	27	2.09	10.74	333	259	26
West North Central	4,638	2.15++	12.20	353	204	4,481
Minnesota	853	2.15++	11.15	335	213	823
Duluth	83	2.77++	10.58	301	133-	80
Minneapolis	348	2.45++	10.57	339	233	338
Rochester	17	1.81	15.47	353	235	15
St. Cloud	28	2.29	9.71	357	286	26
Iowa	801	1.98++	10.38	361	212	767
Cedar Rapids	46	2.38+	10.46	391	196	45
Davenport	77	1.72	11.49	260	208	73
Des Moines	96	2.40++	12.29	344	281	94
Dubuque	17	1.48	12.24	353	118	15
Iowa City	13	2.08	13.38	462	385	11
Sioux City	20	1.25	12.95	350	150	19
Waterloo	22	1.13-	8.23	227	136	22

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious complications related to surgery	General surgical complications
Michigan	172	70	76	34	21	22
Ann Arbor	182	91	91	0	91	0
Battle Creek	87	0	0	0	0	0
Benton Harbor	261	130	130	87	0	43
Detroit	201	72	78	18-	30	30
Flint	151	94	94	38	19	38
Grand Rapids	95--	67	67	57	10	0
Jackson	77	38	38	38	0	0
Kalamazoo	143	29	29	29	0	0
Lansing	118	88	88	59	0	29
Muskegon	161	97	97	65	0	32
Saginaw	182	30	61	61	0	0
Wisconsin	177	70	79	42	16	21
Appleton	109	36	36	36	0	0
Eau Claire	125	31	31	0	0	31
Green Bay	179	0	0	0	0	0
Janesville	100	67	67	0	67	0
Kenosha	154	154	154	0	0	154
LaCrosse	308	0	0	0	0	0
Madison	167	51	51	13	13	26
Milwaukee	221	75	89	64+	11	14
Racine	219	94	94	31	31	31
Sheboygan	91	91	91	0	0	91
Wausau	154	154	154	115	38	0
West North Central	180	60	65	32	15--	18
Minnesota	170	70	75	35	18	22
Duluth	100-	50	50	25	13	13
Minneapolis	180	68	71	50	15	6
Rochester	200	67	67	0	0	67
St. Cloud	154	115	192	38	115+	38
Iowa	154-	64	73	38	17	18
Cedar Rapids	133	44	67	67	0	0
Davenport	192	96	96	41	41	14
Des Moines	213	85	96	32	32	32
Dubuque	0	0	0	0	0	0
Iowa City	182	182	182	182	0	0
Sioux City	158	53	53	53	0	0
Waterloo	45	0	0	0	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Missouri	1,540	2.35++	13.66	368	212	1,492
Columbia	18	2.10	14.56	444	111	17
Joplin	51	2.65++	14.22	333	196	51
Kansas City	358	2.31++	14.09	327	215	349
St. Joseph	34	2.49+	16.38	500	441+	31
St. Louis	657	2.32++	14.41	385+	219	634
Springfield	72	2.60++	15.72	444	194	69
North Dakota	176	2.06++	12.34	307	148-	170
Bismarck	6	0.74--	16.00	167	167	6
Fargo	39	2.76++	13.74	256	128	38
Grand Forks	12	2.11	15.50	417	250	12
South Dakota	194	2.02++	12.59	263--	191	190
Rapid City	13	1.82	12.62	308	308	13
Sioux Falls	30	2.26	14.23	300	133	29
Nebraska	448	2.13++	11.29	342	170-	434
Lincoln	28	1.33	10.39	357	286	25
Omaha	132	2.29++	12.28	311	129--	129
Kansas	626	2.03++	12.88	383+	204	605
Lawrence	14	2.82	13.86	714	286	13
Topeka	44	2.32+	14.86	295	227	41
Wichita	98	2.14+	11.97	449+	204	97
South	14,930	1.66++	13.95	322--	212	14,329
South Atlantic	6,913	1.48--	14.60	322--	214	6,656
Delaware	99	1.41	12.72	212--	141-	96
Wilmington	83	1.43	13.24	217--	145	81
Maryland	504	1.15--	16.80	367	240	492
Baltimore	239	0.98--	16.50	402	251	234
Cumberland	40	2.35+	14.28	225	225	39
Hagerstown	8	0.55--	11.63	500	125	8
Dist. of Columbia	85	1.28-	16.67	424	129-	84
Washington	337	1.30--	17.31	386	196	329
Virginia	931	1.65	15.10	279--	176--	901
Charlottesville	22	1.83	11.05	318	91	22
Danville	27	1.74	15.11	296	185	26
Lynchburg	38	2.10	11.16	105--	79	38
Norfolk	160	1.55	15.83	175--	213	154
Richmond	104	1.21--	16.16	250-	192	101
Roanoke	64	2.09	13.13	203--	78--	64

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Missouri	197	58	61	27	13-	20
Columbia	118	59	59	0	0	59
Joplin	216	39	39	0	20	20
Kansas City	246++	69	74	34	14	26
St. Joseph	226	65	65	0	65	0
St. Louis	192	55	60	33	6--	21
Springfield	101-	43	43	29	0	14
North Dakota	206	53	71	35	18	18
Bismarck	333	0	0	0	0	0
Fargo	105	26	26	0	0	26
Grand Forks	167	83	83	0	0	83
South Dakota	163	32--	32--	21	5	5
Rapid City	154	0	0	0	0	0
Sioux Falls	138	69	69	69	0	0
Nebraska	143-	46-	51	25	9	16
Lincoln	240	0	0	0	0	0
Omaha	140	70	70	39	16	16
Kansas	208	63	71	36	20	15
Lawrence	77	77	77	0	77	0
Topeka	146	73	73	49	24	0
Wichita	206	52	52	31	10	10
South	191++	72++	80+	31	25+	24++
South Atlantic	193+	69	77	32	24	20
Delaware	135	94	94	42	31	21
Wilmington	160	74	74	37	25	12
Maryland	215	83	87	33	33	22
Baltimore	244+	103	107	34	43	30
Cumberland	231	51	51	26	26	0
Hagerstown	125	125	125	125	0	0
Dist. of Columbia	119	36	36	12	24	0
Washington	167	55	58	27	21	9
Virginia	209	70	80	42	23	14
Charlottesville	182	45	91	91	0	0
Danville	192	115	154	115	0	38
Lynchburg	132	26	26	0	0	26
Norfolk	201	71	78	39	19	19
Richmond	188	59	69	20	40	10
Roanoke	203	31	31	31	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
West Virginia	466	1.91++	14.67	283--	232	444
Charleston	66	1.93	15.80	227-	197	64
Huntington	77	1.88	14.36	247-	208	75
Parkersburg	44	2.21	13.14	432	159	43
Wheeling	46	2.09	16.39	261	261	41
North Carolina	1,196	1.74+	14.70	358	207	1,147
Asheville	58	2.37+	12.98	310	172	57
Burlington	27	1.86	15.78	333	185	25
Charlotte	209	1.91+	16.59	335	211	197
Fayetteville	16	1.20	16.19	500	250	16
Greensboro	209	2.10++	14.63	397	225	199
Hickory	45	1.92	14.40	444	244	42
Jacksonville	9	1.75	11.89	556	0	9
Raleigh-Durham	81	1.43	15.10	395	160	77
Wilmington	16	1.27	15.63	313	125	16
South Carolina	517	1.57	16.50	309	221	494
Anderson	23	1.39	20.13	217	174	21
Charleston	43	1.26	22.09	256	256	43
Columbia	62	1.75	16.40	274	274	59
Florence	11	0.98-	11.82	91	182	11
Greenville	126	1.91	14.13	365	246	119
Georgia	1,013	1.80++	13.34	324	223	973
Albany	14	1.51	13.50	429	500	14
Athens	27	2.00	13.44	148	111	27
Atlanta	366	1.93++	12.97	325	238	352
Augusta	61	1.85	15.51	377	131	58
Columbus	26	1.14-	13.08	269	385	24
Macon	39	1.50	16.08	410	256	38
Savannah	38	1.50	17.03	526+	289	34

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
West Virginia	205	41--	41--	16--	14	11
Charleston	172	16	16	0	0	16
Huntington	133	13	13	0	0	13
Parkersburg	186	140	140	47	93+	0
Wheeling	195	73	73	24	24	24
North Carolina	153--	65	70	30	20	20
Asheville	105	70	70	0	35	35
Burlington	120	40	40	40	0	0
Charlotte	132-	51	51	25	5	20
Fayetteville	438	188	188	63	0	125
Greensboro	146	60	60	15	25	20
Hickory	143	71	71	24	24	24
Jacksonville	111	111	111	0	0	111
Raleigh-Durham	195	91	104	39	26	39
Wilmington	188	63	63	63	0	0
South Carolina	188	49	59	26	22	10
Anderson	48	48	48	48	0	0
Charleston	140	23	70	23	47	0
Columbia	203	68	85	68	17	0
Florence	273	0	0	0	0	0
Greenville	227	59	67	17	50	0
Georgia	228++	90++	105++	31	36+	38++
Albany	500+	214	214	143	71	0
Athens	148	37	37	0	0	37
Atlanta	227+	99+	114+	28	45++	40+
Augusta	138	121	138	121++	0	17
Columbus	250	83	125	83	0	42
Macon	316	53	53	0	26	26
Savannah	265	29	29	0	29	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Florida	2,102	1.23--	13.93	322-	227	2,025
Bradenton	60	1.40	12.33	267	300	57
Daytona Beach	68	1.09--	13.66	324	338+	64
Fort Lauderdale	205	1.13--	15.37	361	200	195
Fort Myers	42	0.68--	12.05	333	238	40
Fort Pierce	45	1.09--	14.80	267	200	44
Ft. Walton Beach	14	1.38	14.71	500	286	11
Gainesville	9	0.54--	13.33	444	333	9
Jacksonville	64	0.79--	13.72	297	266	63
Lakeland	76	1.37	12.42	276	289	75
Melbourne	58	1.25-	14.66	310	155	57
Miami-Hialeah	186	1.10--	16.19	366	215	178
Naples	11	0.47--	16.09	182	545	11
Ocala	28	0.89--	12.68	214	214	28
Orlando	145	1.60	12.67	338	234	139
Panama City	12	1.02-	14.33	417	250	11
Pensacola	43	1.43	14.35	349	326	42
Sarasota	112	1.44	13.75	304	179	105
Tallahassee	26	1.49	9.81	462	385	25
Tampa	469	1.45-	14.03	299-	243	455
West Palm Beach	178	1.27--	13.44	348	135--	174
East South Central	3,187	1.85++	13.97	306--	215	3,032
Kentucky	846	2.00++	13.94	301--	196	807
Lexington	50	1.61	13.80	260	160	50
Louisville	151	1.40	14.53	331	219	143
Owensboro	23	2.23	16.17	609	174	23
Tennessee	1,191	2.16++	13.88	278--	226	1,137
Chattanooga	130	2.60++	11.95	315	192	128
Clarksville	30	2.39	11.80	200-	233	29
Jackson	24	2.38	16.04	250	208	24
Johnson City	89	1.62	14.76	326	191	83
Knoxville	163	2.30++	15.07	264-	221	157
Memphis	148	1.67	17.03	297	223	136
Nashville	203	2.18++	14.89	256--	256	194
Alabama	715	1.54	14.35	379	220	674
Anniston	20	1.52	14.25	400	250	19
Birmingham	131	1.21--	14.50	427	214	119
Dothan	9	0.71--	15.67	333	222	9
Florence	17	1.02-	20.82	294	353	16
Gadsden	34	2.38	15.26	353	294	33
Huntsville	36	2.10	15.11	361	333	32
Mobile	88	1.74	15.11	307	182	83
Montgomery	56	1.88	14.79	429	286	51
Tuscaloosa	19	1.40	16.11	474	158	18

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Florida	191	68	76	36	21	20
Bradenton	175	53	53	0	35	18
Daytona Beach	172	94	125	31	0	94++
Fort Lauderdale	190	82	92	51	26	15
Fort Myers	225	50	75	0	75	0
Fort Pierce	136	91	91	91	0	0
Ft. Walton Beach	182	91	91	0	0	91
Gainesville	333	0	0	0	0	0
Jacksonville	159	79	111	63	16	32
Lakeland	200	80	93	53	0	40
Melbourne	158	53	53	35	0	18
Miami-Hialeah	169	45	45	11	11	22
Naples	273	182	182	91	0	91
Ocala	143	0	0	0	0	0
Orlando	129	72	72	22	29	22
Panama City	91	0	0	0	0	0
Pensacola	286	119	143	48	95+	0
Sarasota	200	57	57	19	10	29
Tallahassee	320	120	160	40	80	40
Tampa	220	70	81	48	20	13
West Palm Beach	144	57	57	29	6	23
East South Central	194	75	81	30	22	29++
Kentucky	188	73	78	26	24	29
Lexington	220	100	100	20	60	20
Louisville	126-	63	63	21	7	35
Owensboro	87	0	0	0	0	0
Tennessee	208+	82+	91	40	20	32+
Chattanooga	164	109	117	47	55+	16
Clarksville	172	69	69	34	0	34
Jackson	208	42	42	0	0	42
Johnson City	265	120	120	60	36	24
Knoxville	172	89	127	89++	19	19
Memphis	184	44	59	22	15	22
Nashville	216	108	108	41	26	41
Alabama	174	61	62	13--	19	30
Anniston	211	53	53	53	0	0
Birmingham	109-	42	42	8	17	17
Dothan	222	222	222	0	0	222+
Florence	313	0	0	0	0	0
Gadsden	273	121	121	0	30	91
Huntsville	0--	0	0	0	0	0
Mobile	181	84	84	12	12	60
Montgomery	118	39	59	59	0	0
Tuscaloosa	56	56	56	0	56	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Mississippi	435	1.50	13.69	271--	211	414
Biloxi-Gulfport	35	1.94	14.26	429	200	34
Jackson	50	1.42	14.88	260	260	47
Pascagoula	11	1.29	16.27	182	182	11
West South Central	4,830	1.87++	12.99	334	208	4,641
Arkansas	610	1.90++	12.85	321	213	588
Fayetteville	17	1.44	11.82	706+	294	17
Fort Smith	61	2.85++	12.77	328	246	59
Little Rock	122	2.39++	15.75	344	238	119
Pine Bluff	4	0.36--	11.75	500	250	4
Louisiana	647	1.56	13.30	264--	195	619
Alexandria	19	1.37	13.84	211	105	19
Baton Rouge	67	1.69	12.93	209--	239	67
Houma-Thibodaux	9	0.67--	10.00	0	0	9
Lafayette	21	1.44	15.52	238	429	21
Lake Charles	22	1.34	15.77	364	45	22
Monroe	33	2.25	10.36	212	182	33
New Orleans	187	1.58	15.16	294	193	176
Shreveport	74	2.01	14.11	338	162	71
Oklahoma	799	2.11++	12.20	347	212	772
Enid	11	1.34	12.91	182	455	11
Lawton	18	2.19	14.00	556	167	18
Oklahoma City	184	2.08++	13.49	348	207	176
Tulsa	174	2.45++	11.68	333	259	167

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Mississippi	196	82	89	39	29	22
Biloxi-Gulfport	265	88	88	29	59	0
Jackson	106	106	128	43	64	21
Pascagoula	273	0	0	0	0	0
West South Central	187	74+	83+	30	28+	25+
Arkansas	216+	80	90	36	37	17
Fayetteville	294	118	118	59	59	0
Fort Smith	305+	68	68	17	17	34
Little Rock	176	84	84	8	42	34
Pine Bluff	0	0	0	0	0	0
Louisiana	202	84	94	32	27	34
Alexandria	211	105	105	0	53	53
Baton Rouge	254	134	149	90+	45	15
Houma-Thibodaux	222	111	222	0	0	222+
Lafayette	286	95	95	0	48	48
Lake Charles	91	45	45	0	45	0
Monroe	303	91	152	91	61	0
New Orleans	142	51	57	6-	17	34
Shreveport	211	99	99	42	28	28
Oklahoma	193	66	80	31	30	19
Enid	91	0	0	0	0	0
Lawton	278	0	0	0	0	0
Oklahoma City	176	68	80	28	23	28
Tulsa	204	90	102	42	30	30

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Texas	2,774	1.89++	13.18	349	209	2,662
Abilene	39	2.98++	16.41	385	282	37
Amarillo	55	2.89++	12.16	291	236	52
Austin	111	2.33++	13.17	342	189	107
Beaumont	47	1.11--	12.19	277	149	46
Brazoria	19	1.52	13.21	474	263	18
Brownsville	19	0.94--	12.42	211	158	19
Bryan	10	1.44	10.50	500	300	10
Corpus Christi	27	0.95--	12.07	148	148	25
Dallas	352	2.05++	13.02	392	205	336
El Paso	61	1.64	16.51	508+	295	60
Fort Worth	206	2.10++	13.47	451++	257	196
Galveston	17	0.88--	18.71	588	353	15
Houston	326	1.73	14.93	439++	199	308
Killeen-Temple	43	2.50+	10.60	233	209	43
Laredo	16	1.90	15.19	188	313	14
Longview	35	1.70	12.83	343	286	34
Lubbock	42	2.22	15.05	357	238	41
McAllen	32	1.17-	11.53	188-	63	32
Midland	6	0.81-	12.50	500	167	6
Odessa	16	1.74	18.06	63	188	16
San Angelo	23	2.05	10.61	174	130	22
San Antonio	210	1.94+	13.70	295	205	201
Sherman-Denison	18	1.24	12.00	500	111	18
Texarkana	29	1.89	11.00	172-	241	26
Tyler	31	1.70	12.97	194-	258	31
Victoria	6	0.87-	12.67	333	500	6
Waco	45	1.90	12.09	267	267	43
Wichita Falls	29	2.01	10.45	138--	172	27
West	7,244	1.60	11.82	334-	205	6,981
Mountain	1,933	1.61	11.87	326	213	1,867
Montana	219	2.25++	12.80	352	196	209
Billings	17	1.41	12.59	176	59	17
Great Falls	11	1.21	14.64	273	0	11
Idaho	157	1.43	9.95	363	217	152
Boise City	27	1.46	9.22	148	185	26
Wyoming	64	1.51	15.55	438	219	63
Casper	10	1.86	14.30	400	100	10
Cheyenne	14	2.03	18.86	714	143	14

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Texas	175	73	80	28	25	26
Abilene	243	27	27	0	0	27
Amarillo	135	19	19	0	0	19
Austin	168	75	93	19	28	47
Beaumont	87	65	87	0	65	22
Brazoria	278	56	56	0	56	0
Brownsville	211	53	53	0	0	53
Bryan	200	100	100	0	100	0
Corpus Christi	120	0	0	0	0	0
Dallas	155	68	77	27	27	24
El Paso	250	50	50	17	17	17
Fort Worth	184	71	87	31	31	26
Galveston	267	133	133	0	133	0
Houston	153	58	68	39	10	19
Killeen-Temple	186	116	140	23	47	70
Laredo	143	71	71	71	0	0
Longview	118	29	29	29	0	0
Lubbock	171	73	73	24	0	49
McAllen	156	31	31	31	0	0
Midland	500	167	167	0	0	167
Odessa	313	125	125	63	63	0
San Angelo	0-	0	0	0	0	0
San Antonio	154	65	65	20	15	30
Sherman-Denison	278	56	56	0	0	56
Texarkana	154	77	77	38	0	38
Tyler	226	194+	226+	161++	32	32
Victoria	0	0	0	0	0	0
Waco	163	70	70	23	47	0
Wichita Falls	148	111	111	74	0	37
West	176	65	73	35	21	17
Mountain	192	58	67	35	19	13--
Montana	206	91	105	38	57++	10
Billings	235	118	118	59	59	0
Great Falls	91	91	91	0	91	0
Idaho	138	46	53	46	0	7
Boise City	154	38	38	38	0	0
Wyoming	175	48	63	48	16	0
Casper	100	0	0	0	0	0
Cheyenne	214	71	71	0	71	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Colorado	449	1.68	11.61	341	200	435
Boulder-Longmont	18	1.19	10.61	333	56	18
Colorado Springs	55	2.21+	9.35	218-	218	55
Denver	217	1.81	13.00	378	212	208
Fort Collins	14	0.93--	12.36	500	143	14
Greeley	31	2.67+	10.52	355	323	30
Pueblo	19	1.24	14.58	263	0-	19
New Mexico	216	1.72	12.95	282-	236	205
Albuquerque	54	1.60	11.59	222-	204	52
Las Cruces	20	2.13	17.50	100	250	17
Santa Fe	9	1.06	13.33	444	222	9
Arizona	588	1.69	12.18	304-	194	573
Phoenix	314	1.68	12.61	309	213	303
Tucson	144	2.04+	13.03	271-	160	143
Utah	162	1.26--	9.91	377	272	154
Provo-Orem	22	1.37	12.41	545	318	19
Salt Lake City	96	1.24--	9.43	385	281	93
Nevada	78	0.95--	10.32	192--	282	76
Las Vegas	25	0.55--	10.84	200	360	24
Reno	32	1.67	10.38	219	188	31
Pacific	5,311	1.59	11.81	336	202	5,114
Washington	821	1.78++	10.01	345	206	797
Bellingham	35	2.57+	8.89	286	257	34
Bremerton	36	2.33	9.78	333	167	33
Olympia	28	1.96	7.93	321	143	27
Richland	15	1.19	9.40	333	67	15
Seattle	318	1.99++	10.76	368	201	311
Spokane	45	1.09--	9.76	444	244	44
Tacoma	97	1.93	8.42	320	196	96
Vancouver	19	1.11	12.79	316	158	18
Yakima	36	1.58	9.36	306	333	34
Oregon	384	1.26--	10.48	286-	206	374
Eugene	31	1.07--	9.74	258	161	29
Medford	11	0.54--	10.18	182	0	11
Portland	160	1.61	10.53	331	194	155
Salem	39	1.17-	11.95	154--	282	37

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Noninfectious problems related to the hip	Infectious compli- cations related to surgery	General surgical compli- cations
Colorado	228+	46-	55	32	16	7
Boulder-Longmont	167	56	56	0	56	0
Colorado Springs	200	36	36	18	0	18
Denver	274++	43	58	43	10	5
Fort Collins	143	143	143	0	143	0
Greeley	233	33	33	0	33	0
Pueblo	316	105	158	105	53	0
New Mexico	273++	78	98	54	10	34
Albuquerque	250	115	173+	135++	19	19
Las Cruces	176	59	118	118	0	0
Santa Fe	444	222	222	222	0	0
Arizona	155	49	52-	21	19	12
Phoenix	158	40-	43-	10-	17	17
Tucson	133	70	70	35	28	7
Utah	182	71	84	45	19	19
Provo-Orem	105	53	53	0	53	0
Salt Lake City	204	54	65	32	22	11
Nevada	145	53	53	39	0	13
Las Vegas	167	42	42	42	0	0
Reno	97	32	32	0	0	32
Pacific	170-	68	75	35	22	18
Washington	151-	55	58	30	11-	16
Bellingham	176	0	0	0	0	0
Bremerton	152	30	30	30	0	0
Olympia	185	0	0	0	0	0
Richland	267	67	67	0	0	67
Seattle	135-	29--	29--	16	0--	13
Spokane	205	114	114	45	23	45
Tacoma	219	156++	167++	125++	31	10
Vancouver	167	111	111	0	56	56
Yakima	147	59	59	0	29	29
Oregon	155	86	102	61+	35	5-
Eugene	69	34	34	34	0	0
Medford	182	273	273	91	182+	0
Portland	168	97	135	84++	52+	0
Salem	135	81	81	81	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay				Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures		
California	4,022	1.62	12.22	337	200	3,866
Anaheim-Santa Ana	321	1.92++	12.19	445++	165-	314
Bakersfield	61	1.36	13.87	377	246	55
Chico	35	1.29	11.71	57--	171	35
Fresno	130	2.23++	10.84	238--	215	122
Los Angeles	1,052	1.55	12.88	337	226	1,011
Merced	14	1.04-	17.36	429	286	12
Modesto	68	2.02	11.57	279	118-	65
Oakland	307	1.63	12.09	313	205	291
Oxnard-Ventura	85	1.72	13.87	471+	224	82
Redding	16	0.90--	10.50	188	63	16
Riverside	305	1.50	12.17	393	213	292
Sacramento	206	1.71	11.53	286	160-	203
Salinas	61	2.09	10.20	246	197	55
San Diego	307	1.49	11.40	322	205	294
San Francisco	337	2.06++	13.20	309	193	328
San Jose	130	1.24--	12.52	377	146-	126
Santa Barbara	64	1.68	12.64	391	172	61
Santa Cruz	50	2.03	10.84	200-	120-	50
Santa Rosa	77	1.72	11.00	403	208	74
Stockton	66	1.62	11.77	424	61--	65
Vallejo	44	1.23-	12.09	182--	159	44
Visalia	44	1.53	11.52	318	205	42
Yuba City	14	1.18	14.50	286	214	13
Alaska	17	1.04-	15.82	353	176	16
Anchorage	3	0.53-	17.67	333	333	3
Hawaii	67	0.84--	15.64	448	239	61
Honolulu	55	0.95--	16.16	436	218	50

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Replacement of the head of the femur: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Noninfectious problems related to the hip	Infectious complications related to surgery	General surgical complications
California	176	69	77	34	23	20
Anaheim-Santa Ana	185	54	54	19	19	16
Bakersfield	200	145	182+	109+	36	36
Chico	114	29	57	0	0	57
Fresno	123-	66	66	25	25	16
Los Angeles	213+	82	85	35	23	28
Merced	83	83	83	0	83	0
Modesto	185	62	62	31	15	15
Oakland	189	72	76	34	24	17
Oxnard-Ventura	146	98	122	73	24	24
Redding	63	0	0	0	0	0
Riverside	195	79	106	34	48++	24
Sacramento	163	44	49	30	15	5
Salinas	91-	18	18	0	0	18
San Diego	167	71	78	34	31	14
San Francisco	128--	46	49	34	6	9
San Jose	214	87	95	56	24	16
Santa Barbara	98-	82	82	49	16	16
Santa Cruz	160	60	60	0	40	20
Santa Rosa	135	68	95	41	0	54
Stockton	108	46	46	15	15	15
Vallejo	182	68	68	23	23	23
Visalia	167	48	48	0	48	0
Yuba City	154	77	77	77	0	0
Alaska	63	63	125	125	0	0
Anchorage	0	0	0	0	0	0
Hawaii	148	33	33	16	0	16
Honolulu	120	40	40	20	0	20

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Total cholecystectomy

Approximately 131,000 partial or total cholecystectomies (ICD-9-CM codes 51.21 and 51.22) were performed during 1986 on Medicare beneficiaries 65 years of age or over who did not have end stage renal disease and were not enrolled in health maintenance organizations, as discussed in Volume 2. Only events following the most frequently performed gallbladder procedure, total cholecystectomy (ICD-9-CM code 51.22), are analyzed in this volume. Patients with a secondary diagnosis of cancer of the liver, gallbladder, or pancreas or with a secondary procedure of exploration of the common bile duct were excluded in order to confine the analysis to a more homogeneous population. Information is provided on the 94,056 patients meeting these criteria in 1986. The focus of this analysis is on adverse outcomes during the index stay (when the surgery was performed), death within a year of surgery, and readmissions.

Rates for specific events

The ICD-9-CM codes that were used for selecting cases for this study are provided in Table 1. The diagnoses and procedures (with their ICD-9-CM codes) that were identified with the aid of a panel of general surgeons as signifying potential adverse outcomes following cholecystectomy are also listed. The conditions represented by these diagnoses and procedures are referred to as adverse events. The adverse events are categorized into five event groups:

1. Complications related to bile duct.
2. Other gastrointestinal complications.
3. Infectious complications related to surgery.
4. General surgical complications.
5. Other events.

Table 1 also includes information on which codes were counted as adverse events if they occurred in the index stay, which codes were counted if they were the principal diagnosis for a readmission following cholecystectomy, and the time interval required in order to include a readmission (for example, within 30 days of the date of surgery).

As noted in the introduction, Medicare claims files for a hospital stay contain up to five

diagnostic codes and three procedure codes. For this study, all four secondary diagnostic positions and the two secondary procedure positions were examined in counting events that occurred during the index stay. Thus, up to six events in the index stay could be counted. In contrast, only the principal diagnosis was considered for readmissions. All three procedure positions were examined to identify readmissions with an event.

The total number of adverse events per 1,000 procedures in the index stay was 224.79. Event Group 1, complications related to bile duct, made up only 12.5 percent of the adverse events that occurred in the index stay (28.00 adverse events out of a total of 224.79). Further, the rate of adverse events ascribed to this group could be overstated by up to 22.43 events per 1,000 procedures because cholangitis was included as a complication during the index stay. This diagnosis could have been made at admission, in which case it would not be a complication of the stay.

More than one-half of the adverse events occurring in the index stay were in Event Group 3, infectious complications related to surgery (117.53 per 1,000 procedures). Within this event group, there are three categories of adverse events that can generally be expected to occur postoperatively. They are pneumonias and respiratory complications (ICD-9-CM codes 482, 485, 486, and 997.3); postoperative infection (code 998.5); and cystitis, other urinary tract infections, and pyelonephritis (codes 595.0, 595.9, 599.0, 590.1, and 590.8). They occurred with a frequency of 35.97, 15.35, and 41.59 per 1,000 procedures, respectively. The only other infectious complication that occurred with high enough frequency to note was septicemia, which was reported 21.44 times per 1,000 procedures.

In Event Group 2, other gastrointestinal complications, paralytic ileus was the specific diagnosis most frequently reported during the initial hospitalization (8.08 events per 1,000 procedures). The more general diagnosis of gastrointestinal complications accounted for 11.08 adverse events per 1,000 procedures. Intestinal obstructions (ICD-9-CM codes 560.8 and 560.9) were reported with a frequency of 5.22 events per 1,000 procedures. The resulting total adverse event rate during the index stay for Event Group 2 was slightly less than 25 per 1,000 procedures.

Event Group 4, general surgical complications, occurred in the index stay at a rate of 54.36 events

NOTE: For total cholecystectomy, records of hospital stays with principal ICD-9-CM procedure code 51.22 and principal ICD-9-CM diagnosis code 574 or 575 were selected.

per 1,000 procedures. The most frequently reported complication in the group was retention of urine, which occurred 14.76 times per 1,000 procedures. Hemorrhage or hematoma complicating the procedure occurred 6.15 times per 1,000 procedures, postoperative incisional ventral hernia occurred 4.58 times per 1,000 procedures, and pulmonary embolism and infarction occurred 3.83 times per 1,000 procedures.

The total number of readmissions for adverse events was 44.69 per 1,000 persons discharged alive (Table 1). The principal diagnoses for these admissions were partitioned according to the five major event groups described previously.

Contrary to the events occurring within the index stay, Event Group 3, infectious complications related to surgery, did not constitute the major reason for readmissions. This event group accounted for only 8.07 readmissions per 1,000 persons discharged alive. Event Group 2, other gastrointestinal complications, also accounted for a small number of readmissions, 8.30 per 1,000 persons discharged alive. In this event group, intestinal obstructions (ICD-9-CM codes 560.8 and 560.9) accounted for 6.19 readmissions.

Event Groups 1 and 4, complications related to bile duct and general surgical complications, were the most frequent causes of readmission. However, readmissions for these event groups occurred at rates of only 12.23 and 14.05 events per 1,000 persons discharged alive, respectively. The most commonly occurring specific readmission diagnoses or procedures in these two event groups were calculus (7.57 readmissions per 1,000 live discharges) and the associated endoscopic sphincterotomy (2.96); postoperative incisional ventral hernia (6.57 readmissions per 1,000 live discharges); and thrombophlebitis and pulmonary embolism (ICD-9-CM codes 415.1, 451, and 453), which occurred at a rate of 3.38 readmissions per 1,000 persons discharged alive.

Patterns by age, sex, and race

Table 2 contains information on rates of total cholecystectomy, average length of stay (ALOS), and outcomes following total cholecystectomy for all persons combined and by age, sex, and race. In 1986, 94,056 total cholecystectomies without common bile duct exploration were performed on aged Medicare enrollees who were not members of health maintenance organizations, for a rate of 3.52 procedures per 1,000. Of 1,000 persons undergoing the operation, 188 persons (almost 20 percent) experienced at least one adverse event during the index hospital stay. Because more than one adverse event could occur per person, the total number of adverse events per 1,000 procedures was

slightly more than 22 percent (the 224.79 per 1,000 procedures reported in Table 1), or an average of 1.2 adverse events per person who experienced any adverse event.

Of the 94,056 persons who underwent surgery, 92,221 were discharged alive (more than 98 percent), and 1,835 were discharged dead. The number of persons dying within 1 year of having a cholecystectomy was relatively low, 75 deaths per 1,000 procedures. Given that 19.5 deaths per 1,000 procedures occurred during the index stay, the inhospital mortality rate was 26 percent of the 1-year postoperative mortality rate.

Overall, ALOS for total cholecystectomy was 10.07 days. ALOS rose with age, from 8.92 days for patients aged 65-74 years to 14.36 for patients aged 85 years or over. Except for black persons 85 years or over, men had longer ALOS than women. Black men had the longest ALOS of any race-sex group, 13.12 days.

The number of persons with one readmission or more for any cause within 90 days of surgery per 1,000 persons discharged alive is also shown in Table 2. The rate for cholecystectomy, 132 readmissions per 1,000 persons discharged alive, was one of the lowest for the procedures discussed in this volume. The number of persons with one readmission or more in which the principal diagnosis or procedure was a potential adverse event listed in Table 1 was 40 per 1,000 persons discharged alive.

As was the case with the information on total and partial cholecystectomy presented in Volume 2, women had higher rates of total cholecystectomy than men (3.67 procedures per 1,000 enrollees versus 3.31). For all persons combined, the rate of cholecystectomy was greatest among persons 75-84 years (3.72) and lowest in the age group 85 years or over (2.78). For all women, however, the highest rates were in the group 65-74 years (3.90). White persons had notably higher rates than black persons, 3.64 versus 2.11 procedures per 1,000 enrollees.

As might be expected, the number of persons with one adverse event or more in the index stay per 1,000 procedures and the number of persons dying within 1 year per 1,000 procedures increased with age for all persons combined and for both sexes and both races. For each age group, both measures were greater for men than for women. Rates of persons with one readmission or more for any cause within 90 days per 1,000 persons discharged alive and rates of persons with readmissions with adverse events per 1,000 persons discharged alive followed this pattern as well.

The right side of Table 2 contains readmission rates for the event groups listed in Table 1.

Because of the small number of procedures done on black Medicare beneficiaries, age- and sex-specific rates for black males and females are not discussed here.

Readmission rates for complications related to bile duct, other gastrointestinal complications, and infectious complications related to surgery all increased with age. Curiously, general surgical complications decreased as age increased. Men were more likely than women to have had readmissions for complications related to bile duct, infectious complications related to surgery, and general surgical complications. Women were more likely to have had readmissions for other gastrointestinal complications.

In all three age groups, white persons were more likely than black persons to be readmitted to the hospital for an adverse event following total cholecystectomy. This overall difference is attributable to readmissions for complications related to bile duct and general surgical complications. No differences by race were found for infectious complications related to surgery, and black persons were more frequently readmitted for other gastrointestinal complications than were white persons.

Variations by geographic area

Tables 3 and 4 contain data on adverse events following cholecystectomy by geographic area. Data by metropolitan and rural areas within each State are shown in Table 3, and data by metropolitan statistical area (MSA) are shown in Table 4. Figure 1 was derived from the data in these tables.

Tables 3 and 4 contain data for the same measures that are shown by age, sex, and race in Table 2. Data for areas in which the rate was significantly different from the national average are annotated with a "+" or "-" if the local rate was different at the $p = 0.05$ level and with a "++" or "--" if the local rate was different at the $p = 0.01$ level. Details on the statistical tests are contained in the appendix.

The number of persons with one adverse event or more during the index stay was highest in the Northeast Region (202 persons per 1,000 procedures) and lowest in the South (171 persons per 1,000 procedures). There were no large differences by census region in the number of persons dying within 1 year of the index procedure. In the South, the number of persons with one readmission or more for any cause within 90 days of surgery per 1,000 persons discharged alive was high compared with the other regions while the number of persons with adverse events reported

during the index stay was low compared with the other regions.

Readmissions for adverse events per 1,000 live discharges are shown by State in Figure 1. Readmission rates for adverse events ranged from 27 in Hawaii to 63 in South Dakota. These rates, however, were not statistically significant at the $p \leq 0.05$ level. The State with the lowest statistically significant rate was Oregon (30 readmissions per 1,000 discharged alive); the highest were Virginia and Mississippi (both 61).

ALOS (column 3 of Table 3) was highest in the Northeast (11.55 days) and lowest in the West (8.35 days). The District of Columbia had the highest ALOS (14.33 days), and Washington had the lowest (7.56 days).

Urban-rural patterns

As noted in Volume 2, discharge rates for partial and total cholecystectomies combined were higher for rural than for urban areas in all States except five. As shown in Table 3, in the United States as a whole, the number of persons with adverse events in the index stay per 1,000 procedures was higher in urban areas than rural areas (191 versus 180 persons per 1,000 procedures). This trend was found for each census region.

Nationally, the number of persons dying within 1 year of surgery was the same in rural as in urban areas. The Northeast was the only region where the urban death rate (79 deaths per 1,000 procedures) was significantly higher than the total U.S. rate (75 deaths per 1,000 procedures). Nationally, the 90-day readmission rate in urban areas (129 readmissions per 1,000 discharged alive) was significantly lower than the U.S. rate (132), and the rural rate (140) was significantly higher. This pattern generally held true in the census regions. Nationally and in each region, the rate of readmissions with an adverse event was also higher in rural than urban areas.

Correlations between rates

Correlations were performed between ALOS and rates of events in the index stay and between ALOS and the rate of persons with readmissions. This was done to examine the hypothesis that the areas with high ALOS might have high rates of events within the index stay because of the longer time for adverse events to appear. Areas with high ALOS might also have lower rates of readmissions because more problems would be taken care of in the index stay.

For total cholecystectomy, the correlation across MSAs between ALOS and persons with one event or more in the index stay was small but positive (0.143) and significant at $p \leq 0.05$. A negative correlation (-0.126) was found between ALOS and readmissions with an event, but it was not statistically significant. Similarly, slight positive

but statistically nonsignificant correlations were found between ALOS and readmissions for any cause within 90 days of surgery, between persons with one event or more in the index stay and one readmission or more with an event, and between deaths within 1 year of surgery and one readmission or more with an event.

Table 1. Total cholecystectomy: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986 index stays
(Number of procedures: 94,056. Number of live discharges: 92,221. Total cholecystectomy must include ICD-9-CM principal procedure code 51.22. Stays are excluded if procedure code 51.51 is listed. Stays must also include principal diagnosis code 574 or 575. Stays are excluded if the following diagnosis codes are in any position: 155, 156, or 157.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmis- sions within(1)		
Total	--	--	--	224.79	44.69
1. Complications related to bile duct(2)	--	--	--	28.00	12.23
Cholangitis	576.1	Yes	30 days	22.43	0.81
Obstruction of bile duct	576.2	Yes(3)	30 days	4.81	0.27
Perforation of bile duct	576.3	Yes	30 days	0.10	0.00
Fistula of bile duct	576.4	No	30 days	--	0.07
Calculus of bile duct without mention of cholecystitis	574.5	No	1 year	--	7.57
Persistent postoperative fistula	998.6	No	30 days	--	0.09
Endoscopic sphincterotomy	51.97	Yes	1 year	0.67	2.96
Postcholecystectomy syndrome	576.0	No	90 days	--	0.47
2. Other gastrointestinal complications(2)	--	--	--	24.90	8.30
Infectious colitis, enteritis, and gastroenteritis	009.0	No	15 days	--	0.00
Colitis, enteritis, and gastroenteritis of presumed infectious origin	009.1	No	15 days	--	0.00
Volvulus	560.2	Yes	1 year	0.52	0.29
Other specified intestinal obstruction	560.8	Yes	1 year	3.14	2.35
Unspecified intestinal obstruction	560.9	Yes	1 year	2.08	3.84
Gastrointestinal complications	997.4	Yes	1 year	11.08	1.05
Acute pancreatitis	577.0	No	30 days	--	0.01
	997.4				
Nausea and vomiting	787.0	No	30 days	--	0.51
Jaundice, unspecified	782.4	No	1 year	--	0.24
Paralytic ileus	560.1	Yes	No	8.08	--

(1) Measured from date of surgery to date of readmission.

(2) For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3) Included only if procedure codes 51.97 is not present.

(4) Included only if procedure code 54.61 is not present.

(5) If code 410 is principal diagnosis, code 997.1 is not necessary.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1. Total cholecystectomy: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986 index stays
(Number of procedures: 94,056. Number of live discharges: 92,221. Total cholecystectomy must include ICD-9-CM principal procedure code 51.22. Stays are excluded if procedure code 51.51 is listed. Stays must also include principal diagnosis code 574 or 575. Stays are excluded if the following diagnosis codes are in any position: 155, 156, or 157.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmis- sions within(1)		
3. Infectious complications related to surgery(2)	--	--	--	117.53	8.07
Other bacterial pneumonia	482	Yes	15 days	2.90	0.13
Bronchopneumonia, organism unspecified	485	Yes	15 days	0.71	0.11
Pneumonia, organism unspecified	486	Yes	15 days	11.15	0.61
Respiratory complications	997.3	Yes	15 days	21.21	0.21
Postoperative infection	998.5	Yes	30 days	15.35	2.84
Other suppurative peritonitis	567.2	No	30 days	--	0.27
Other cellulitis and abscess, upper arm and forearm	682.3	No	30 days	--	0.03
Other cellulitis and abscess, hand, except fingers and thumb	682.4	No	30 days	--	0.01
Unspecified peritonitis	567.9	No	30 days	--	0.02
Other infection	999.3	Yes	30 days	0.22	0.02
Acute cystitis	595.0	Yes	30 days	0.75	0.01
Cystitis, unspecified	595.9	Yes	30 days	1.08	0.01
Urinary tract infection, site not specified	599.0	Yes	30 days	39.23	1.44
Acute pyelonephritis	590.1	Yes	30 days	0.20	0.23
Other pyelonephritis or pyonephrosis, not specified as acute or chronic	590.8	Yes	30 days	0.33	0.13
Infection of kidney, unspecified	590.9	Yes	30 days	0.01	0.01
Septicemia	038	Yes	30 days	21.44	1.06
Other specified peritonitis	567.8	No	30 days	--	0.24
Other cellulitis and abscess, unspecified site	682.9	No	30 days	--	0.02
Other cellulitis and abscess, trunk	682.2	No	30 days	--	0.04
Disruption of operation wound	998.3	Yes	30 days	2.91	0.62

(1) Measured from date of surgery to date of readmission.

(2) For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3) Included only if procedure codes 51.97 is not present.

(4) Included only if procedure code 54.61 is not present.

(5) If code 410 is principal diagnosis, code 997.1 is not necessary.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1. Total cholecystectomy: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986 index stays
(Number of procedures: 94,056. Number of live discharges: 92,221. Total cholecystectomy must include ICD-9-CM principal procedure code 51.22. Stays are excluded if procedure code 51.51 is listed. Stays must also include principal diagnosis code 574 or 575. Stays are excluded if the following diagnosis codes are in any position: 155, 156, or 157.)

Event	ICD-9-CM code	Index stay	Included if occurs in:	Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
			Readmissions within(1)		
4. General surgical complications(2)	--	--	--	54.36	14.05
Peripheral vascular complications	997.2	Yes	No	1.37	--
Acute reaction to foreign substance accidentally left during a procedure	998.7	Yes	30 days	0.05	0.00
Unspecified adverse effect of drug, medicinal and biological substance	995.2	Yes	15 days	1.29	0.04
Acute edema of lung, unspecified	518.4	Yes	15 days	1.08	0.00
Pulmonary insufficiency following trauma and surgery	518.5	Yes	15 days	2.04	0.00
Retention of urine	788.2	Yes	30 days	14.76	0.20
Incontinence of urine	788.3	Yes	30 days	0.97	0.00
Other vascular complications	999.2	Yes	30 days	0.91	0.01
Foreign body accidentally left during a procedure	998.4	Yes	30 days	0.10	0.00
Other specified complications of procedures, not elsewhere classified	998.8	Yes	30 days	8.46	0.50
Unspecified complication of procedure, not elsewhere classified	998.9	Yes	30 days	0.39	0.01
Postoperative shock	998.0	Yes	30 days	0.72	0.02
Accidental puncture or laceration during a procedure	998.2	Yes	30 days	2.75	0.01
Hemorrhage or hematoma complicating a procedure	998.1	Yes	15 days	6.15	0.40
Incisional ventral hernia with gangrene	551.21	Yes(4)	1 year	0.00	0.00
Incisional ventral hernia with obstruction	552.21	Yes(4)	1 year	0.72	0.46
Incisional ventral hernia	553.21	Yes(4)	1 year	4.58	6.57
Trigonitis	595.3	Yes	30 days	0.15	0.00
Pulmonary embolism and infarction	415.1	Yes	30 days	3.83	1.85
Phlebitis and thrombophlebitis	451	No	30 days	--	0.81
Other venous embolism and thrombosis	453	No	30 days	--	0.72
Reclosure of postoperative disruption of abdominal wall	54.61	Yes	1 year	3.00	1.75
Acute myocardial infarction	410 and 997.1	Yes	15 days(5)	1.03	0.70
5. Other events(2)	--	--	--	--	--
Abdominal pain	789.0	No	90 days	--	2.04

(1)Measured from date of surgery to date of readmission.

(2)For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3)Included only if procedure codes 51.97 is not present.

(4)Included only if procedure code 54.61 is not present.

(5)If code 410 is principal diagnosis, code 997.1 is not necessary.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986 index stays

Race, sex, and age	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
All persons(2)	94,056	3.52	10.07	188	75	92,221
65-74 years	57,205	3.54	8.92	158	46	56,635
75-84 years	29,859	3.72	11.28	216	99	29,044
85 years or over	6,992	2.78	14.36	315	207	6,542
Men	35,218	3.31	10.55	220	96	34,331
65-74 years	21,736	3.08	9.44	192	66	21,418
75-84 years	11,373	3.91	11.80	246	125	10,975
85 years or over	2,109	3.09	15.16	355	240	1,938
Women	58,838	3.67	9.78	169	63	57,890
65-74 years	35,469	3.90	8.59	137	34	35,217
75-84 years	18,486	3.62	10.96	197	84	18,069
85 years or over	4,883	2.66	14.01	297	193	4,604
White	85,837	3.64	9.98	186	74	84,209
65-74 years	52,150	3.67	8.82	156	45	51,654
75-84 years	27,285	3.82	11.20	213	99	26,559
85 years or over	6,402	2.87	14.27	315	204	5,996
Men	32,489	3.46	10.47	217	95	31,687
65-74 years	20,077	3.23	9.36	191	65	19,791
75-84 years	10,465	4.07	11.71	242	123	10,105
85 years or over	1,947	3.24	15.17	353	242	1,791
Women	53,348	3.76	9.68	167	62	52,522
65-74 years	32,073	4.01	8.47	134	33	31,863
75-84 years	16,820	3.69	10.87	195	83	16,454
85 years or over	4,455	2.73	13.88	299	188	4,205
Black	4,199	2.11	12.10	223	99	4,068
65-74 years	2,427	2.00	11.00	190	62	2,381
75-84 years	1,403	2.40	12.99	262	130	1,347
85 years or over	369	1.89	15.92	293	225	340
Men	1,152	1.45	13.12	277	138	1,102
65-74 years	637	1.23	11.96	231	86	620
75-84 years	428	1.99	14.38	336	192	404
85 years or over	87	1.50	15.37	322	253	78
Women	3,047	2.54	11.71	202	84	2,966
65-74 years	1,790	2.58	10.65	175	53	1,761
75-84 years	975	2.65	12.38	229	104	943
85 years or over	282	2.05	16.10	284	216	262

(1)Includes "other events" category.

(2)Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986 index stays

Race, sex, and age	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges				
	Within 90 days for any cause	With an event	Total(1)	Complications related to bile duct	Other gastro-intestinal complications	Infectious complications related to surgery	General surgical complications
All persons(2)	132	40	45	12	8	8	14
65-74 years	113	36	41	10	7	7	15
75-84 years	154	44	48	14	9	9	14
85 years or over	203	59	65	23	14	15	9
Men	157	49	55	15	8	10	20
65-74 years	138	47	52	12	7	9	22
75-84 years	182	51	56	17	8	10	19
85 years or over	220	71	77	30	11	19	14
Women	118	35	39	11	9	7	10
65-74 years	98	30	34	9	7	6	10
75-84 years	138	40	43	13	9	8	11
85 years or over	196	54	59	19	16	13	8
White	132	41	45	13	8	8	14
65-74 years	113	37	41	10	7	7	15
75-84 years	154	45	49	15	9	9	14
85 years or over	201	59	65	24	13	15	9
Men	156	50	55	15	8	10	20
65-74 years	137	46	52	12	7	9	22
75-84 years	181	51	56	17	8	10	19
85 years or over	221	74	81	32	11	20	15
Women	118	35	39	11	9	7	11
65-74 years	98	31	34	9	7	6	11
75-84 years	137	40	44	13	10	8	11
85 years or over	193	53	58	20	14	12	7
Black	150	36	39	8	11	9	9
65-74 years	122	36	40	9	10	8	10
75-84 years	177	32	33	6	11	7	8
85 years or over	241	56	59	9	24	15	9
Men	191	47	51	11	14	8	15
65-74 years	174	60	65	16	16	13	18
75-84 years	215	32	35	2	12	2	15
85 years or over	205	26	26	13	0	0	0
Women	135	32	35	7	10	9	7
65-74 years	103	28	31	7	7	7	7
75-84 years	160	32	33	7	11	10	5
85 years or over	252	65	69	8	31	19	11

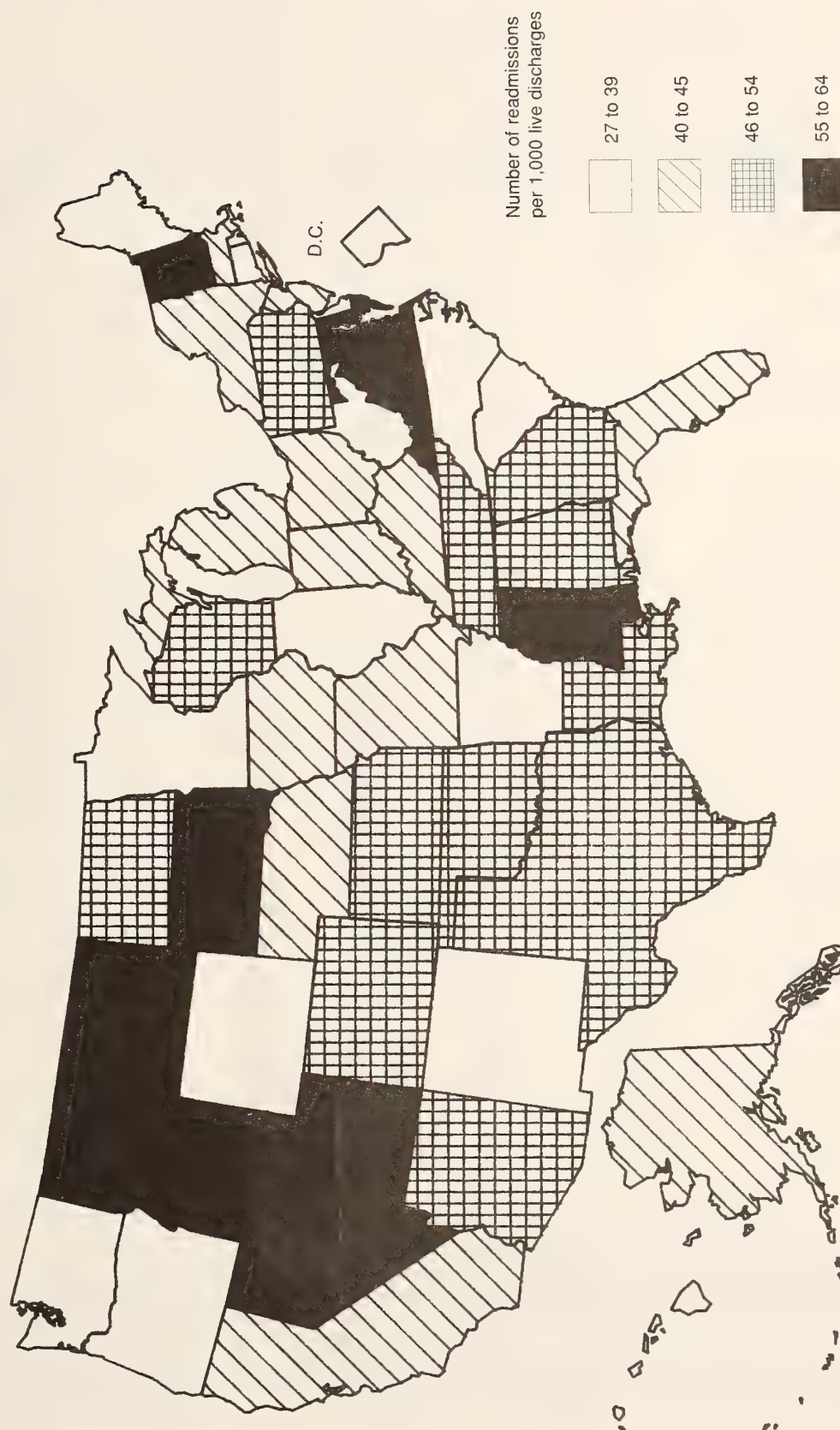
(1)Includes "other events" category.

(2)Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 1. Total cholecystectomy: Number of readmissions with an adverse event per 1,000 live discharges for aged Medicare enrollees, by State: 1986 index stays



NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
United States	94,056	3.52	10.07	188	75	92,221
Metropolitan	63,572	3.28--	10.34	191+	75	62,301
Rural	30,484	4.16++	9.50	180--	75	29,920
Northeast	19,158	3.05--	11.55	202++	79+	18,748
Metropolitan	16,434	2.95--	11.76	202++	80+	16,069
Rural	2,724	3.82++	10.30	200	72	2,679
New England	4,808	3.06--	11.07	210++	75	4,699
Metropolitan	4,023	3.00--	11.27	204+	76	3,928
Rural	785	3.47	10.03	243++	71	771
Maine	522	3.41	10.41	243++	61	511
Metropolitan	256	3.11-	10.75	242+	66	248
Rural	266	3.75	10.08	244+	56	263
New Hampshire	368	3.21	10.74	217	68	362
Metropolitan	246	3.32	11.13	215	65	243
Rural	122	3.00	9.97	221	74	119
Vermont	223	3.55	10.35	305++	90	218
Metropolitan	22	2.11--	9.91	364	0	22
Rural	201	3.84	10.40	299++	100	196
Massachusetts	1,988	2.80--	11.70	209+	76	1,938
Metropolitan	1,834	2.78--	11.85	208+	76	1,787
Rural	154	3.05	9.88	221	78	151
Rhode Island	532	4.02++	11.61	173	85	517
Metropolitan	532	4.02++	11.61	173	85	517
Rural	0	0.00	0.00	0	0	0
Connecticut	1,175	2.96--	10.29	195	74	1,153
Metropolitan	1,133	2.95--	10.34	198	77	1,111
Rural	42	3.46	8.69	119	0	42
Middle Atlantic	14,350	3.05--	11.71	199++	80+	14,049
Metropolitan	12,411	2.94--	11.91	202++	81++	12,141
Rural	1,939	3.99++	10.41	183	72	1,908
New York	5,503	2.57--	12.54	215++	85++	5,361
Metropolitan	4,732	2.46--	12.83	215++	88++	4,600
Rural	771	3.49	10.79	213	67	761
New Jersey	2,872	3.13--	12.69	225++	79	2,810
Metropolitan	2,872	3.13--	12.69	225++	79	2,810
Rural	0	0.00	0.00	0	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges				
	Within 90 days for any cause	With an event	Total (1)	Compli- cations related to bile duct	Other gastro- intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
United States	132	40	45	12	8	8	14
Metropolitan	129--	39	43-	12	8	7	13
Rural	140++	43+	49++	13	9	9+	16
Northeast	131	42	45	15++	7	8	13
Metropolitan	128	41	44	15++	7	8	12-
Rural	147+	46	51	17	8	7	18
New England	128	39	42	15	6-	7	12
Metropolitan	128	37	40	15	6-	7	10-
Rural	128	52	52	16	6	6	19
Maine	117	37	37	12	8	4	10
Metropolitan	129	36	36	16	4	8	4
Rural	106	38	38	8	11	0	15
New Hampshire	157	55	61	25	0	17	19
Metropolitan	136	58	66	33+	0	21	12
Rural	202	50	50	8	0	8	34
Vermont	110	55	55	28	0	5	23
Metropolitan	45	0	0	0	0	0	0
Rural	117	61	61	31	0	5	26
Massachusetts	132	39	43	17	8	7	8--
Metropolitan	132	36	40	17	8	6	8-
Rural	126	73	73	20	13	20	7
Rhode Island	153	39	39	12	4	6	15
Metropolitan	153	39	39	12	4	6	15
Rural	0	0	0	0	0	0	0
Connecticut	111-	33	36	10	4	6	13
Metropolitan	111-	33	36	10	5	6	13
Rural	119	24	24	0	0	0	24
Middle Atlantic	131	42	47	15++	8	8	13
Metropolitan	128	42	46	15+	8	8	13
Rural	155++	44	51	17	8	8	17
New York	122-	40	45	15	9	8	12
Metropolitan	119--	41	45	14	9	8	12
Rural	139	38	49	21	5	5	16
New Jersey	121	41	44	16	5--	9	12
Metropolitan	121	41	44	16	5--	9	12
Rural	0	0	0	0	0	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Pennsylvania	5,975	3.63+	10.48	172--	76	5,878
Metropolitan	4,807	3.48	10.56	174-	76	4,731
Rural	1,168	4.41++	10.15	164-	75	1,147
North Central	25,528	3.70++	9.93	194+	75	25,033
Metropolitan	15,248	3.47-	10.29	197++	75	14,947
Rural	10,280	4.11++	9.39	188	75	10,086
East North Central	17,130	3.61++	10.12	193	74	16,805
Metropolitan	11,856	3.43--	10.36	197+	75	11,628
Rural	5,274	4.08++	9.57	187	74	5,177
Ohio	4,653	3.68++	10.16	201+	70	4,583
Metropolitan	3,497	3.54	10.28	206++	74	3,439
Rural	1,156	4.18++	9.78	188	59-	1,144
Indiana	2,440	3.92++	10.05	151--	84	2,387
Metropolitan	1,499	3.75+	10.40	155--	84	1,469
Rural	941	4.21++	9.49	145--	83	918
Illinois	4,398	3.48	11.09	212++	83+	4,291
Metropolitan	3,098	3.25--	11.42	216++	83	3,017
Rural	1,300	4.17++	10.29	203	85	1,274
Michigan	3,367	3.43	9.26	172-	61--	3,318
Metropolitan	2,401	3.23--	9.45	169-	62-	2,367
Rural	966	4.06++	8.78	181	58-	951
Wisconsin	2,272	3.72+	9.52	218++	75	2,226
Metropolitan	1,361	3.69	9.74	223++	68	1,336
Rural	911	3.77+	9.20	211	86	890
West North Central	8,398	3.89++	9.54	194	75	8,228
Metropolitan	3,392	3.59	10.04	200	74	3,319
Rural	5,006	4.13++	9.20	190	76	4,909
Minnesota	1,318	3.32-	8.21	220++	74	1,288
Metropolitan	528	2.81--	8.14	235+	80	511
Rural	790	3.77	8.25	210	70	777
Iowa	1,703	4.21++	9.13	166-	78	1,670
Metropolitan	545	3.98++	9.22	145--	70	533
Rural	1,158	4.33++	9.08	176	82	1,137
Missouri	2,518	3.84++	10.77	209++	77	2,472
Metropolitan	1,457	3.80++	11.17	216++	75	1,428
Rural	1,061	3.89++	10.22	199	80	1,044

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Complications related to bile duct	Other gastro-intestinal complications	Infectious complications related to surgery	General surgical complications
Pennsylvania	145++	45	49	16+	9	8	15
Metropolitan	140	44	48	16	8	7	14
Rural	166++	48	52	15	10	10	17
North Central	127-	38	43	11-	8	8	14
Metropolitan	126-	37--	40-	9--	8	7	13
Rural	130	41	47	13	8	9	15
East North Central	125--	37-	41	10--	8	8	13
Metropolitan	125-	37-	40-	9--	8	7	14
Rural	124	39	44	11	9	9	13
Ohio	133	38	43	8--	12+	8	13
Metropolitan	138	40	44	8--	10	8	15
Rural	116	34	41	8	16+	9	6--
Indiana	125	39	41	10	8	8	14
Metropolitan	121	37	39	8	7	8	15
Rural	132	41	45	13	10	8	13
Illinois	132	32--	35--	7--	6-	7	14
Metropolitan	131	31--	33--	7--	6	7	12
Rural	133	34	38	7-	5	6	19
Michigan	109--	36	42	11	9	9	11
Metropolitan	108--	35	41	10	9	8	10
Rural	113	39	46	16	7	12	12
Wisconsin	117-	46	50	14	6	9	18
Metropolitan	114-	44	48	14	6	5	19
Rural	122	49	53	15	6	13	16
West North Central	133	40	45	13	8	8	15
Metropolitan	127	36	39	10	7	7	12
Rural	137	43	50	15	8	9	16
Minnesota	125	30-	35	8	10	6	9
Metropolitan	110	31	35	10	12	4	8
Rural	135	28-	35	6	9	8	10
Iowa	125	40	45	13	8	8	13
Metropolitan	131	32	32	4	6	9	4-
Rural	121	43	51	18	10	7	17
Missouri	138	39	44	15	8	8	10
Metropolitan	133	39	43	14	10	8	10
Rural	145	40	45	17	6	10	11

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
North Dakota	390	4.56++	8.91	138--	54	388
Metropolitan	95	4.14	9.36	126	53	95
Rural	295	4.72++	8.77	142-	54	293
South Dakota	387	4.02+	9.14	199	59	380
Metropolitan	86	4.21	8.28	151	12-	85
Rural	301	3.97+	9.39	213	73	295
Nebraska	844	4.02++	9.47	190	88	825
Metropolitan	227	3.24	9.99	189	84	222
Rural	617	4.41++	9.27	190	89	603
Kansas	1,238	4.02++	9.38	193	73	1,205
Metropolitan	454	3.67	10.10	203	81	445
Rural	784	4.26++	8.96	188	68	760
South	34,950	3.89++	10.07	171--	74	34,290
Metropolitan	21,019	3.65++	10.26	174--	73	20,622
Rural	13,931	4.32++	9.78	167--	76	13,668
South Atlantic	16,408	3.52	10.10	169--	71-	16,112
Metropolitan	11,135	3.36--	10.33	168--	69--	10,940
Rural	5,273	3.89++	9.63	169--	75	5,172
Delaware	280	3.99	9.74	86--	61	276
Metropolitan	170	3.83	10.34	94--	71	167
Rural	110	4.25	8.80	73--	45	109
Maryland	1,319	3.02--	10.49	201	62	1,300
Metropolitan	1,164	2.95--	10.49	208	62	1,149
Rural	155	3.73	10.50	148	65	151
Dist. of Columbia	81	1.22--	14.33	210	62	81
Metropolitan	81	1.22--	14.33	210	62	81
Rural	0	0.00	0.00	0	0	0
Virginia	1,852	3.28--	10.79	152--	76	1,814
Metropolitan	1,069	3.02--	11.01	138--	69	1,046
Rural	783	3.72	10.50	171	86	768
West Virginia	1,125	4.61++	10.03	161-	75	1,109
Metropolitan	382	4.21++	10.51	147-	58	377
Rural	743	4.84++	9.78	168	83	732
North Carolina	2,410	3.50	9.26	198	71	2,355
Metropolitan	1,207	3.48	9.47	199	70	1,184
Rural	1,203	3.52	9.06	198	72	1,171

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges				
	Within 90 days for any cause	With an event	Total(1)	Compli- cations related to bile duct	Other gastro- intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
North Dakota	180+	46	54	23	3	13	15
Metropolitan	158	53	53	21	0	11	21
Rural	188+	44	55	24	3	14	14
South Dakota	132	55	63	13	16	8	21
Metropolitan	106	35	35	12	0	0	24
Rural	139	61	71	14	20	10	20
Nebraska	128	41	45	10	5	5	24
Metropolitan	108	18	18	0	0	0	14
Rural	136	50	55	13	7	7	28+
Kansas	129	46	53	13	4	10	23
Metropolitan	128	47	52	9	2	9	31+
Rural	130	46	54	16	5	11	18
South	137+	41	45	12	8	8	15
Metropolitan	130	39	43	12	8	7-	15
Rural	147++	44+	49	12	8	10+	16
South Atlantic	130	40	44	13	7	7	15
Metropolitan	126	39	42	13	7	6--	14
Rural	137	42	48	12	8	9	16
Delaware	149	36	36	14	4	4	7
Metropolitan	120	30	30	18	0	0	12
Rural	193	46	46	9	9	9	0
Maryland	144	51	55	13	8	9	22
Metropolitan	142	54+	59	15	8	10	23
Rural	159	26	26	0	13	7	7
Dist. of Columbia	99	37	37	0	12	0	12
Metropolitan	99	37	37	0	12	0	12
Rural	0	0	0	0	0	0	0
Virginia	144	55++	61+	15	9	14+	17
Metropolitan	130	53	56	17	6	11	17
Rural	164+	59+	66+	13	13	18++	16
West Virginia	131	34	38	10	4	9	14
Metropolitan	127	40	45	11	3	5	21
Rural	133	31	34	10	4	11	10
North Carolina	108--	36	39	9	6	5-	18
Metropolitan	109--	30-	31-	3--	6	3-	20
Rural	107--	42	46	15	7	7	16

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
South Carolina	1,282	3.90++	10.27	150--	66	1,259
Metropolitan	766	4.10++	10.41	154--	60	753
Rural	516	3.63	10.05	143--	76	506
Georgia	2,237	3.98++	10.19	182	77	2,198
Metropolitan	1,210	3.86++	10.71	198	74	1,190
Rural	1,027	4.13++	9.58	163-	81	1,008
Florida	5,822	3.41-	10.04	158--	69	5,720
Metropolitan	5,086	3.36--	10.17	157--	71	4,993
Rural	736	3.85+	9.19	167	60	727
East South Central	7,396	4.28++	10.47	163--	79	7,245
Metropolitan	3,470	3.97++	10.67	169--	79	3,392
Rural	3,926	4.60++	10.30	157--	79	3,853
Kentucky	1,854	4.39++	10.36	172	76	1,820
Metropolitan	710	3.87+	10.43	177	76	695
Rural	1,144	4.78++	10.32	168	75	1,125
Tennessee	2,354	4.28++	10.73	149--	85	2,298
Metropolitan	1,314	3.84++	11.08	142--	88	1,284
Rural	1,040	4.99++	10.29	157--	80	1,014
Alabama	1,997	4.31++	10.43	191	79	1,955
Metropolitan	1,192	4.23++	10.52	193	74	1,164
Rural	805	4.44++	10.29	189	86	791
Mississippi	1,191	4.10++	10.20	131--	74	1,172
Metropolitan	254	3.83	9.89	177	63	249
Rural	937	4.19++	10.28	118--	77	923
West South Central	11,146	4.31++	9.75	181-	76	10,933
Metropolitan	6,414	4.08++	9.93	186	76	6,290
Rural	4,732	4.66++	9.52	173--	74	4,643
Arkansas	1,541	4.79++	10.37	158--	76	1,506
Metropolitan	458	4.54++	11.32	164	81	448
Rural	1,083	4.91++	9.97	156--	74	1,058
Louisiana	1,662	4.00++	9.90	175	79	1,632
Metropolitan	1,009	3.76+	10.23	170	81	987
Rural	653	4.42++	9.38	182	77	645
Oklahoma	1,854	4.90++	9.47	170-	64	1,830
Metropolitan	842	4.68++	9.77	183	63	830
Rural	1,012	5.09++	9.22	160-	65	1,000

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Compli- cations related to bile duct	Other gastro- intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
South Carolina	122	29-	35	14	2--	5	13
Metropolitan	116	27-	28-	9	1-	4	13
Rural	130	34	45	20	2	6	12
Georgia	145	43	47	13	5	7	20
Metropolitan	141	44	46	17	7	3	18
Rural	150	43	48	8	4	11	23
Florida	126	37	41	14	9	6-	11-
Metropolitan	125	35	39	14	8	6	9--
Rural	132	45	54	14	15	3	21
East South Central	154++	43	48	13	8	10	15
Metropolitan	145+	40	45	13	6	9	14
Rural	162++	46	51	12	9	11	16
Kentucky	155++	37	41	10	4-	8	15
Metropolitan	134	24--	29-	9	0--	7	12
Rural	169++	44	48	12	7	9	17
Tennessee	153++	40	46	12	10	9	12
Metropolitan	137	39	46	16	10	8	9-
Rural	173++	42	45	8	10	11	16
Alabama	149+	47	51	14	8	11	15
Metropolitan	159+	46	51	15	8	10	15
Rural	135	48	51	14	8	11	16
Mississippi	162++	54+	61+	15	8	12	22
Metropolitan	153	60	64	8	0	8	48++
Rural	165++	52	61	17	10	13	15
West South Central	136	42	45	11	9	9	16
Metropolitan	129	41	44	10	9	8	16
Rural	146++	44	47	12	8	11	15
Arkansas	140	28--	30--	7--	7	7	6--
Metropolitan	118	20--	20--	4	7	7	2-
Rural	149	31	34	8	8	8	8-
Louisiana	151+	46	48	9	8	12	17
Metropolitan	152	51	54	9	10	15+	17
Rural	149	39	40	9	5	8	17
Oklahoma	137	44	49	18	9	4--	17
Metropolitan	127	41	46	13	7	5	19
Rural	146	47	51	22	10	3	16

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Texas	6,089	4.15++	9.65	191	78	5,965
Metropolitan	4,105	4.02++	9.73	194	77	4,025
Rural	1,984	4.43++	9.47	185	79	1,940
West	14,420	3.18--	8.35	199++	73	14,150
Metropolitan	10,871	2.98--	8.44	201++	72	10,663
Rural	3,549	3.96++	8.08	194	75	3,487
Mountain	4,759	3.96++	8.43	197	67-	4,676
Metropolitan	2,665	3.70+	8.56	207+	66	2,619
Rural	2,094	4.36++	8.27	184	69	2,057
Montana	363	3.73	8.53	154	58	361
Metropolitan	75	3.54	8.85	80--	27	75
Rural	288	3.79	8.45	174	66	286
Idaho	452	4.12++	7.92	204	44--	449
Metropolitan	86	4.66+	8.01	209	23	86
Rural	366	4.01+	7.90	202	49-	363
Wyoming	182	4.29+	9.83	203	71	178
Metropolitan	40	3.26	11.53	225	75	40
Rural	142	4.71++	9.35	197	70	138
Colorado	962	3.61	8.86	199	65	940
Metropolitan	707	3.50	8.92	194	59	692
Rural	255	3.93	8.69	212	82	248
New Mexico	600	4.79++	8.27	170	57	593
Metropolitan	214	4.15+	8.47	210	47-	213
Rural	386	5.23++	8.15	148-	62	380
Arizona	1,302	3.73+	8.54	203	81	1,275
Metropolitan	879	3.41	8.71	216+	74	860
Rural	423	4.66++	8.18	175	95	415
Utah	630	4.90++	7.62	225+	73	620
Metropolitan	461	4.94++	7.68	234+	85	455
Rural	169	4.79++	7.47	201	41-	165
Nevada	268	3.28	8.41	198	71	260
Metropolitan	203	3.15	8.28	192	69	198
Rural	65	3.73	8.82	215	77	62

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges				
	Within 90 days for any cause	With an event	Total(1)	Compli- cations related to bile duct	Other gastro- intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Texas	131	44	47	10	10	10	17
Metropolitan	125	40	44	10	10	6	17
Rural	143	51+	55	9	9	18++	17
West	133	41	45	11	11++	8	13
Metropolitan	131	39	43	12	10+	8	12
Rural	139	47	51	9	13+	9	17
Mountain	139	47+	52+	12	13+	10	14
Metropolitan	131	45	49	13	11	9	13
Rural	149+	49	56	12	14+	11	17
Montana	144	61	61	11	17	11	17
Metropolitan	120	13	13	13	0	0	0
Rural	150	73+	73	10	21	14	21
Idaho	129	45	56	13	13	16	13
Metropolitan	116	35	35	12	0	12	12
Rural	132	47	61	14	17	17	14
Wyoming	197+	39	39	6	11	6	17
Metropolitan	125	75	75	25	25	0	25
Rural	217+	29	29	0	7	7	14
Colorado	147	45	49	11	14	10	11
Metropolitan	143	43	45	12	10	9	9
Rural	157	48	60	8	24+	12	16
New Mexico	126	34	39	12	8	5	13
Metropolitan	122	38	42	19	9	5	9
Rural	129	32	37	8	8	5	16
Arizona	129	49	54	13	13	9	15
Metropolitan	113	47	53	12	13	8	17
Rural	164	53	55	14	12	12	10
Utah	150	55	58	16	16	10	16
Metropolitan	154	51	53	11	18	9	15
Rural	139	67	73	30	12	12	18
Nevada	131	46	58	15	4	19	19
Metropolitan	141	51	56	20	5	25+	5
Rural	97	32	65	0	0	0	65+

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Pacific	9,661	2.89--	8.31	200++	76	9,474
Metropolitan	8,206	2.81--	8.40	199+	74	8,044
Rural	1,455	3.49	7.81	208	85	1,430
Washington	1,590	3.44	7.56	226++	77	1,563
Metropolitan	1,129	3.25--	7.78	235++	76	1,110
Rural	461	4.02++	7.04	204	78	453
Oregon	955	3.14--	7.88	200	84	938
Metropolitan	508	2.80--	7.94	189	89	498
Rural	447	3.66	7.82	213	78	440
California	6,835	2.76--	8.45	194	73	6,699
Metropolitan	6,394	2.74--	8.47	192	72	6,265
Rural	441	3.00--	8.08	227	86	434
Alaska	49	3.00	11.24	122	143	48
Metropolitan	15	2.67	11.67	200	0	15
Rural	34	3.17	11.06	88	206+	33
Hawaii	232	2.89--	10.65	203	103	226
Metropolitan	160	2.77--	11.18	225	106	156
Rural	72	3.19	9.46	153	97	70

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Complications related to bile duct	Other gastro-intestinal complications	Infectious complications related to surgery	General surgical complications
Pacific	130	38	42	10	10	7	13
Metropolitan	132	37	42	11	10	7	12
Rural	124	44	45	6--	12	6	17
Washington	133	36	38	8	10	7	11
Metropolitan	135	26--	28--	7	6	6	7--
Rural	128	62	64	11	18	9	20
Oregon	100--	28-	29--	7	6	1--	12
Metropolitan	112	28	30	12	8	0-	10
Rural	86--	27	27-	2	5	2	14
California	134	40	45	12	11+	8	13
Metropolitan	133	40	45	12	11	8	13
Rural	152	46	46	5	14	7	18
Alaska	250	42	42	21	21	0	0
Metropolitan	267	67	67	67	0	0	0
Rural	242	30	30	0	30	0	0
Hawaii	97	27	27	0	9	9	9
Metropolitan	96	26	26	0	13	6	6
Rural	100	29	29	0	0	14	14

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
United States	94,056	3.52	10.07	188	75	92,221
Northeast	19,158	3.05--	11.55	202++	79+	18,748
New England	4,808	3.06--	11.07	210++	75	4,699
Maine	522	3.41	10.41	243++	61	511
Bangor	53	3.31	10.68	189	38	53
Lewiston-Auburn	42	3.12	8.88	262	48	41
Portland	161	3.05-	11.27	255	81	154
New Hampshire	368	3.21	10.74	217	68	362
Manchester	157	3.54	11.57	248	89	155
Portsmouth	89	2.99	10.34	157	22	88
Vermont	223	3.55	10.35	305++	90	218
Burlington	22	2.11--	9.91	364	0	22
Massachusetts	1,988	2.80--	11.70	209+	76	1,938
Boston	1,146	2.67--	12.26	212+	72	1,119
New Bedford	190	2.90--	11.99	242	84	185
Pittsfield	56	2.76-	8.96	161	54	56
Springfield	242	3.35	10.13	198	95	231
Worcester	200	2.81--	12.24	175	75	196
Rhode Island	532	4.02++	11.61	173	85	517
Providence	532	4.02++	11.61	173	85	517
Connecticut	1,175	2.96--	10.29	195	74	1,153
Bridgeport	255	2.63--	11.06	196	59	253
Hartford	486	3.09--	10.08	171	84	475
New Haven	305	2.96--	10.17	236+	72	298
New London	87	3.15	10.32	218	103	85

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges				
	Within 90 days for any cause	With an event	Total(1)	Compli- cations related to bile duct	Other gastro- intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
United States	132	40	45	12	8	8	14
Northeast	131	42	45	15++	7	8	13
New England	128	39	42	15	6-	7	12
Maine	117	37	37	12	8	4	10
Bangor	94	0	0	0	0	0	0
Lewiston-Auburn	73	24	24	24	0	0	0
Portland	156	52	52	19	6	13	6
New Hampshire	157	55	61	25	0	17	19
Manchester	135	71	77	39+	0	19	19
Portsmouth	136	34	45	23	0	23	0
Vermont	110	55	55	28	0	5	23
Burlington	45	0	0	0	0	0	0
Massachusetts	132	39	43	17	8	7	8--
Boston	122	37	44	21+	6	6	8-
New Bedford	114	27	27	16	5	0	5
Pittsfield	179	54	54	18	18	18	0
Springfield	165	52	52	4	13	9	22
Worcester	153	15	15	5	10	0	0
Rhode Island	153	39	39	12	4	6	15
Providence	153	39	39	12	4	6	15
Connecticut	111-	33	36	10	4	6	13
Bridgeport	123	28	32	20	4	4	0
Hartford	120	46	48	11	6	4	25
New Haven	91-	17--	17--	0	3	10	3
New London	94	35	47	12	0	12	12

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Middle Atlantic	14,350	3.05--	11.71	199++	80+	14,049
New York	5,503	2.57--	12.54	215++	85++	5,361
Albany	302	2.62--	12.29	235	73	295
Binghamton	111	3.12	9.37	225	72	110
Buffalo	380	2.83--	12.36	203	84	373
Elmira	46	3.36	9.87	217	109	44
Glens Falls	56	3.68	10.20	250	71	55
Nassau-Suffolk	774	2.60--	12.99	186	70	755
New York	2,151	2.16--	14.01	229++	103++	2,068
Niagara Falls	98	3.18	12.76	235	112	97
Orange County	87	2.85-	9.97	138	103	85
Poughkeepsie	98	3.52	14.72	255	82	96
Rochester	275	2.68--	10.97	178	65	273
Syracuse	209	2.78--	9.61	187	72	207
Utica-Rome	145	3.10	9.98	248	69	142
New Jersey	2,872	3.13--	12.69	225++	79	2,810
Atlantic City	137	2.95-	12.19	212	80	135
Bergen-Passaic	530	3.09--	12.00	223	72	518
Jersey City	197	3.07-	14.03	213	71	193
Middlesex	285	3.13-	11.59	253+	74	281
Monmouth-Ocean	517	3.34	13.45	219	70	502
Newark	616	2.91--	13.26	216	91	603
Trenton	110	2.86-	11.48	282+	73	108
Vineland	54	3.30	12.50	259	93	52
Pennsylvania	5,975	3.63+	10.48	172--	76	5,878
Allentown	394	4.16++	9.26	178	66	390
Altoona	68	3.29	10.40	118	29	68
Beaver County	120	4.35+	9.31	200	75	116
Erie	138	3.92	10.51	181	80	136
Harrisburg	279	3.83	9.44	151	68	276
Johnstown	168	4.17+	10.58	214	77	165
Lancaster	187	3.89	9.81	176	86	187
Philadelphia	1,700	2.99--	11.70	181	75	1,675
Pittsburgh	1,237	3.82++	11.07	170	79	1,210
Reading	168	3.47	8.96	149	113	164
Scranton	425	3.46	10.60	219	78	420
Sharon	74	3.89	10.34	189	108	72
State College	37	3.69	7.35	135	81	36
Williamsport	46	2.73-	8.52	174	65	46
York	163	3.36	9.54	172	80	159

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Complications related to bile duct	Other gastro-intestinal complications	Infectious complications related to surgery	General surgical complications
Middle Atlantic	131	42	47	15++	8	8	13
New York	122-	40	45	15	9	8	12
Albany	105	24	24-	7	7	0	7
Binghamton	155	45	55	9	18	9	9
Buffalo	137	35	38	11	5	5	16
Elmira	182	68	114	0	0	68+	45
Glens Falls	55	18	18	0	0	18	0
Nassau-Suffolk	127	40	42	13	8	7	11
New York	116-	45	48	18	9	8	12
Niagara Falls	52--	21	31	31	0	0	0
Orange County	200	35	47	0	12	12	12
Poughkeepsie	104	31	31	0	21	0	10
Rochester	117	40	48	11	15	11	7
Syracuse	106	58	68	5	10	24	24
Utica-Rome	113	28	35	7	14	7	7
New Jersey	121	41	44	16	5--	9	12
Atlantic City	133	37	37	7	7	0	22
Bergen-Passaic	120	39	42	21	2	8	12
Jersey City	109	41	52	26	0	10	5
Middlesex	82--	39	39	11	7	11	11
Monmouth-Ocean	106-	34	38	18	2	6	10
Newark	141	38	38	8	3	10	13
Trenton	120	65	65	28	9	19	0
Vineland	77	38	58	38	0	0	19
Pennsylvania	145++	45	49	16+	9	8	15
Allentown	156	23-	23--	5	5	3	10
Altoona	118	74	88	44	0	0	44
Beaver County	103	60	60	26	9	9	17
Erie	147	51	51	15	7	22	7
Harrisburg	98	18--	18--	4	7	4	4
Johnstown	152	55	67	24	12	12	18
Lancaster	107	43	43	5	16	5	5
Philadelphia	145	48	50	17	8	8	15
Pittsburgh	155+	53	60+	21	9	5	21
Reading	128	18	24	12	0	6	6
Scranton	126	43	52	21	10	14	5
Sharon	181	56	56	0	28	0	14
State College	83	28	28	0	0	0	28
Williamsport	152	43	43	0	0	22	22
York	101	44	44	0	13	19	6

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
North Central	25,528	3.70++	9.93	194+	75	25,033
East North Central	17,130	3.61++	10.12	193	74	16,805
Ohio	4,653	3.68++	10.16	201+	70	4,583
Akron	282	3.73	9.80	227	71	279
Canton	184	3.55	10.19	207	76	181
Cincinnati	532	3.34	9.76	175	71	527
Cleveland	779	3.21--	10.67	222+	65	767
Columbus	490	4.04++	10.98	216	73	479
Dayton	364	3.52	9.96	223	66	358
Hamilton	117	4.50+	8.71	77--	60	116
Lima	63	3.22	10.44	286	95	61
Lorain-Elyria	93	3.40	9.44	215	43	93
Mansfield	51	3.35	9.80	196	78	51
Steubenville	94	4.29	10.49	96--	53	93
Toledo	225	3.18	11.05	187	89	221
Youngstown	248	3.58	10.33	222	93	237
Indiana	2,440	3.92++	10.05	151--	84	2,387
Anderson	83	4.83+	13.84	193	120	81
Bloomington	24	3.03	10.00	167	42	24
Elkhart-Goshen	61	3.90	9.62	164	82	61
Evansville	136	3.95	10.58	132	88	133
Fort Wayne	136	3.62	9.73	66--	44	136
Gary-Hammond	211	3.45	12.41	137-	57	204
Indianapolis	419	3.54	10.08	186	93	412
Kokomo	51	4.70	9.61	98	98	49
Lafayette	49	4.36	8.08	224	20	48
Muncie	61	4.43	10.49	98-	82	61
South Bend	139	4.19	8.81	122-	65	136
Terre Haute	77	3.93	10.06	260	117	74
Illinois	4,398	3.48	11.09	212++	83+	4,291
Aurora-Elgin	121	3.91	11.09	198	91	116
Bloomington	39	3.08	12.97	333	77	36
Champaign	54	4.03	8.91	167	56	54
Chicago	1,834	3.02--	11.80	225++	88+	1,783
Decatur	58	3.63	10.76	224	86	56
Joliet	112	3.99	11.80	161	107	110
Kankakee	40	3.33	8.90	225	0	40
Lake County	125	3.46	10.80	200	64	123
Peoria	164	3.77	11.57	146	49	163
Rockford	90	3.17	8.00	167	78	87
Springfield	92	3.71	11.42	207	87	90

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Complications related to bile duct	Other gastro-intestinal complications	Infectious complications related to surgery	General surgical complications
North Central	127-	38	43	11-	8	8	14
East North Central	125--	37-	41	10--	8	8	13
Ohio	133	38	43	8--	12+	8	13
Akron	93-	18--	18--	4	4	4	7
Canton	160	22	28	6	0	17	6
Cincinnati	159	53	63	17	13	15	13
Cleveland	134	44	51	8	13	5	21
Columbus	119	33	35	6	8	4	15
Dayton	142	36	36	14	14	3	6
Hamilton	103	34	43	0	9	17	17
Lima	131	33	33	0	33	0	0
Lorain-Elyria	140	43	43	11	11	0	22
Mansfield	157	59	59	20	0	20	20
Steubenville	118	32	32	11	0	11	11
Toledo	167	41	41	14	5	5	18
Youngstown	143	42	46	0	8	21	13
Indiana	125	39	41	10	8	8	14
Anderson	148	25	25	0	0	25	0
Bloomington	42	42	42	0	0	0	42
Elkhart-Goshen	66	33	49	16	0	16	0
Evansville	98	60	60	0	8	8	45+
Fort Wayne	110	37	44	0	22	7	15
Gary-Hammond	147	39	44	20	0	15	10
Indianapolis	133	39	41	15	12	5	10
Kokomo	143	20	20	0	0	0	0
Lafayette	83	0	0	0	0	0	0
Muncie	82	16	16	0	0	0	16
South Bend	125	29	29	7	0	7	15
Terre Haute	108	27	27	0	0	0	27
Illinois	132	32--	35--	7--	6-	7	14
Aurora-Elgin	138	34	34	9	9	9	9
Bloomington	194	111	139+	28	56	0	28
Champaign	167	37	37	37	0	0	0
Chicago	131	27--	29--	7--	7	7	8--
Decatur	179	54	71	0	18	0	54
Joliet	200	45	45	9	9	0	18
Kankakee	100	0	0	0	0	0	0
Lake County	146	16	16	0	0	8	8
Peoria	98	25	25	6	0	12	6
Rockford	103	46	57	11	0	0	34
Springfield	156	22	22	0	11	0	11

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Michigan	3,367	3.43	9.26	172-	61--	3,318
Ann Arbor	39	2.20--	8.23	205	77	37
Battle Creek	72	4.28	10.15	194	28	72
Benton Harbor	57	2.64-	9.23	193	70	56
Detroit	1,449	3.23--	9.85	157--	65	1,428
Flint	117	2.72--	8.81	154	85	112
Grand Rapids	224	3.50	9.02	214	58	221
Jackson	52	3.64	7.18	145	81	61
Kalamazoo	59	2.74-	8.27	186	34	59
Lansing	104	3.20	8.73	125	38	104
Muskegon	83	4.38	8.00	157	60	83
Saginaw	135	3.20	9.60	237	59	134
Wisconsin	2,272	3.72+	9.52	218++	75	2,226
Appleton	129	3.74	11.20	333++	85	127
Eau Claire	64	3.77	8.38	172	63	63
Green Bay	70	3.65	9.41	157	43	69
Janesville	82	4.96++	9.16	159	61	78
Kenosha	32	2.24--	9.69	125	63	31
LaCrosse	50	4.22	10.22	220	40	50
Madison	102	3.31	9.30	284+	39	100
Milwaukee	623	3.73	10.12	233++	75	613
Racine	57	2.78-	8.84	140	35	56
Sheboygan	63	4.36	8.38	190	111	61
Wausau	45	3.48	8.93	222	67	45
West North Central	8,398	3.89++	9.54	194	75	8,228
Minnesota	1,318	3.32-	8.21	220++	74	1,288
Duluth	81	2.70--	7.73	185	12-	81
Minneapolis	402	2.84--	7.97	226	85	387
Rochester	36	3.83	10.19	278	111	35
St. Cloud	34	2.78	8.32	353	147	33
Iowa	1,703	4.21++	9.13	166-	78	1,670
Cedar Rapids	85	4.40	9.11	94--	47	84
Davenport	158	3.54	9.11	139	139+	148
Des Moines	151	3.77	10.12	179	40-	148
Dubuque	34	2.97	7.21	147	59	34
Iowa City	21	3.37	7.95	48	0	21
Sioux City	53	3.32	9.75	94	57	53
Waterloo	102	5.23++	8.03	167	108	99

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Compli- cations related to bile duct	Other gastro- intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Michigan	109--	36	42	11	9	9	11
Ann Arbor	54	54	54	0	27	0	27
Battle Creek	139	56	97	69++	14	0	14
Benton Harbor	125	0	0	0	0	0	0
Detroit	104--	29-	32-	5--	8	8	8--
Flint	116	45	63	27	9	0	27
Grand Rapids	95	45	45	0	9	18	14
Jackson	148	66	66	16	16	33	0
Kalamazoo	119	34	34	0	34	0	0
Lansing	135	38	38	0	0	19	19
Muskegon	84	36	48	24	0	0	12
Saginaw	127	45	75	37	15	0	15
Wisconsin	117-	46	50	14	6	9	18
Appleton	126	47	47	31	0	0	8
Eau Claire	159	63	79	16	16	16	32
Green Bay	58	29	58	43	0	0	14
Janesville	128	51	51	13	13	0	13
Kenosha	97	65	65	0	32	32	0
LaCrosse	60	20	20	0	0	0	20
Madison	140	40	50	30	10	0	10
Milwaukee	111	46	47	8	5	7	26+
Racine	89	18	18	0	0	0	18
Sheboygan	115	49	49	16	0	16	16
Wausau	156	22	22	22	0	0	0
West North Central	133	40	45	13	8	8	15
Minnesota	125	30-	35	8	10	6	9
Duluth	49--	12	12	0	0	0	12
Minneapolis	106	41	47	8	18	5	10
Rochester	86	0	0	0	0	0	0
St. Cloud	333+	61	61	61	0	0	0
Iowa	125	40	45	13	8	8	13
Cedar Rapids	107	36	36	0	12	12	0
Davenport	122	34	34	0	0	14	20
Des Moines	135	27	27	7	0	7	0
Dubuque	118	0	0	0	0	0	0
Iowa City	0	0	0	0	0	0	0
Sioux City	132	19	19	0	0	0	0
Waterloo	202	81	81	10	20	20	10

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Missouri	2,518	3.84++	10.77	209++	77	2,472
Columbia	40	4.67	9.75	250	75	39
Joplin	73	3.79	12.16	342++	68	70
Kansas City	555	3.58	11.10	195	68	545
St. Joseph	62	4.55	10.71	403++	48	60
St. Louis	1,082	3.82+	11.50	201	75	1,064
Springfield	126	4.55+	9.90	325++	79	122
North Dakota	390	4.56++	8.91	138--	54	388
Bismarck	39	4.78	8.59	51-	77	39
Fargo	55	3.89	9.02	164	36	54
Grand Forks	20	3.52	11.40	150	50	20
South Dakota	387	4.02+	9.14	199	59	380
Rapid City	29	4.05	7.76	103	0	29
Sioux Falls	57	4.29	8.54	175	18	56
Nebraska	844	4.02++	9.47	190	88	825
Lincoln	82	3.91	8.88	183	61	81
Omaha	193	3.35	10.59	192	98	189
Kansas	1,238	4.02++	9.38	193	73	1,205
Lawrence	9	1.81--	10.22	222	0	9
Topeka	65	3.42	9.71	215	169+	64
Wichita	161	3.51	9.27	236	62	157
South	34,950	3.89++	10.07	171--	74	34,290
South Atlantic	16,408	3.52	10.10	169--	71-	16,112
Delaware	280	3.99	9.74	86--	61	276
Wilmington	231	3.97	10.20	104--	74	227
Maryland	1,319	3.02--	10.49	201	62	1,300
Baltimore	708	2.89--	10.58	209	78	697
Cumberland	66	3.87	10.80	258	15	65
Hagerstown	46	3.17	10.43	174	130	45
Dist. of Columbia	81	1.22--	14.33	210	62	81
Washington	558	2.16--	10.87	183	38--	554
Virginia	1,852	3.28--	10.79	152--	76	1,814
Charlottesville	27	2.25--	8.33	148	0	27
Danville	56	3.61	11.79	179	71	54
Lynchburg	69	3.81	9.54	116	101	67
Norfolk	311	3.01--	11.66	141-	80	304
Richmond	289	3.37	10.74	125--	73	283
Roanoke	109	3.56	12.77	174	92	105

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges				
	Within 90 days for any cause	With an event	Total (1)	Compli- cations related to bile duct	Other gastro- intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Missouri	138	39	44	15	8	8	10
Columbia	128	26	26	0	0	0	26
Joplin	143	14	14	0	0	14	0
Kansas City	128	40	44	11	9	11	11
St. Joseph	100	50	50	33	17	0	0
St. Louis	119	40	46	15	8	7	16
Springfield	148	41	41	8	8	16	8
North Dakota	180+	46	54	23	3	13	15
Bismarck	179	51	51	26	0	26	0
Fargo	167	56	56	19	0	0	37
Grand Forks	50	0	0	0	0	0	0
South Dakota	132	55	63	13	16	8	21
Rapid City	69	34	34	0	0	0	34
Sioux Falls	125	36	36	18	0	0	18
Nebraska	128	41	45	10	5	5	24
Lincoln	136	12	12	0	0	0	12
Omaha	101	21	21	0	0	5	16
Kansas	129	46	53	13	4	10	23
Lawrence	111	111	111	0	0	0	111
Topeka	125	31	47	31	16	0	0
Wichita	159	51	51	0	0	6	45+
South	137+	41	45	12	8	8	15
South Atlantic	130	40	44	13	7	7	15
Delaware	149	36	36	14	4	4	7
Wilmington	141	40	40	18	4	0	18
Maryland	144	51	55	13	8	9	22
Baltimore	151	59+	65	16	9	11	29++
Cumberland	200	62	62	15	0	0	31
Hagerstown	67	22	22	0	0	0	22
Dist. of Columbia	99	37	37	0	12	0	12
Washington	116	45	51	13	9	9	13
Virginia	144	55++	61+	15	9	14+	17
Charlottesville	37	0	0	0	0	0	0
Danville	148	93	111	56	0	19	19
Lynchburg	134	60	75	45	0	15	0
Norfolk	132	43	43	10	10	0	16
Richmond	134	53	53	11	0	18	18
Roanoke	152	76	76	19	10	10	38

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
West Virginia	1,125	4.61++	10.03	161-	75	1,109
Charleston	152	4.44+	10.66	145	53	149
Huntington	155	3.79	9.92	148	65	154
Parkersburg	96	4.83++	10.19	167	94	95
Wheeling	98	4.45+	12.17	184	112	97
North Carolina	2,410	3.50	9.26	198	71	2,355
Asheville	88	3.60	9.31	193	80	86
Burlington	49	3.38	8.16	245	61	49
Charlotte	375	3.43	9.58	192	83	368
Fayetteville	43	3.21	8.93	116	70	41
Greensboro	397	3.99+	9.42	186	65	388
Hickory	81	3.46	9.10	185	74	80
Jacksonville	18	3.51	8.06	222	56	18
Raleigh-Durham	168	2.97-	9.99	262+	60	166
Wilmington	38	3.01	10.11	158	53	37
South Carolina	1,282	3.90++	10.27	150--	66	1,259
Anderson	78	4.70+	11.54	154	64	77
Charleston	108	3.15	11.21	185	93	105
Columbia	142	4.02	11.22	99--	35--	140
Florence	41	3.66	10.98	146	24	41
Greenville	302	4.58++	9.59	169	60	296
Georgia	2,237	3.98++	10.19	182	77	2,198
Albany	33	3.55	10.42	242	30	33
Athens	57	4.22	8.96	123	35	57
Atlanta	732	3.86+	10.12	190	66	720
Augusta	111	3.37	11.61	171	63	107
Columbus	83	3.63	9.60	133	60	83
Macon	99	3.82	10.52	121-	91	98
Savannah	107	4.22	14.48	336++	131	104

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges				
	Within 90 days for any cause	With an event	Total (1)	Compli- cations related to bile duct	Other gastro- intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
West Virginia	131	34	38	10	4	9	14
Charleston	134	60	74	27	0	7	27
Huntington	143	32	39	0	19	6	13
Parkersburg	168	53	53	11	0	11	32
Wheeling	175	31	31	10	0	0	21
North Carolina	108--	36	39	9	6	5-	18
Asheville	81	23	23	0	0	12	12
Burlington	122	20	41	0	41	0	0
Charlotte	122	43	43	5	3	5	30+
Fayetteville	98	49	49	0	0	0	49
Greensboro	113	31	31	0-	8	3	21
Hickory	75	13	13	0	0	0	13
Jacksonville	56	0	0	0	0	0	0
Raleigh-Durham	120	24	30	6	6	0	18
Wilmington	54	0	0	0	0	0	0
South Carolina	122	29-	35	14	2--	5	13
Anderson	91	39	39	26	0	0	13
Charleston	181	19	19	0	0	10	10
Columbia	107	36	43	29	0	0	14
Florence	220	73	73	24	0	0	49
Greenville	84--	14--	14--	0	3	3	7
Georgia	145	43	47	13	5	7	20
Albany	121	0	0	0	0	0	0
Athens	193	35	35	0	18	0	18
Atlanta	139	44	49	17	7	6	18
Augusta	131	28	28	0	19	0	0
Columbus	133	36	36	0	0	0	36
Macon	153	41	41	20	0	0	20
Savannah	96	29	29	19	0	0	10

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Florida	5,822	3.41-	10.04	158--	69	5,720
Bradenton	174	4.06	9.80	144	138+	166
Daytona Beach	216	3.45	10.09	125--	74	213
Fort Lauderdale	504	2.77--	11.59	165	67	495
Fort Myers	227	3.70	10.37	181	79	223
Fort Pierce	126	3.06	10.63	103--	32	125
Ft. Walton Beach	28	2.75	8.50	143	0	28
Gainesville	64	3.82	8.80	141	63	61
Jacksonville	281	3.47	9.78	149	78	279
Lakeland	231	4.16+	8.81	87--	61	227
Melbourne	171	3.68	9.02	129-	58	170
Miami-Hialeah	465	2.76--	10.72	163	47--	459
Naples	53	2.26--	9.32	170	57	52
Ocala	116	3.70	9.23	103--	52	116
Orlando	335	3.70	10.05	179	48-	332
Panama City	45	3.81	11.47	133	44	45
Pensacola	122	4.07	9.61	156	41	120
Sarasota	237	3.04-	9.74	203	51	233
Tallahassee	73	4.19	8.49	192	137	67
Tampa	1,212	3.74+	10.48	177	91	1,187
West Palm Beach	406	2.91--	9.68	131--	67	395
East South Central	7,396	4.28++	10.47	163--	79	7,245
Kentucky	1,854	4.39++	10.36	172	76	1,820
Lexington	127	4.10	9.22	173	63	126
Louisville	404	3.76	10.42	183	106+	394
Owensboro	54	5.23+	10.02	241	56	52
Tennessee	2,354	4.28++	10.73	149--	85	2,298
Chattanooga	242	4.83++	12.13	186	91	237
Clarksville	42	3.35	10.21	119	167	40
Jackson	56	5.56++	11.09	125	71	56
Johnson City	184	3.34	10.36	163	60	182
Knoxville	305	4.30++	10.36	85--	89	302
Memphis	259	2.92--	12.36	162	81	251
Nashville	397	4.27++	10.88	164	91	386
Alabama	1,997	4.31++	10.43	191	79	1,955
Anniston	56	4.27	10.61	143	36	55
Birmingham	485	4.47++	10.08	212	82	472
Dothan	48	3.78	12.06	250	42	47
Florence	68	4.08	13.22	235	103	66
Gadsden	60	4.20	10.17	117	117	57
Huntsville	51	2.98	10.67	118	78	50
Mobile	234	4.63++	10.05	154	64	231
Montgomery	94	3.15	11.45	277	64	90
Tuscaloosa	58	4.26	10.34	190	69	58

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Compli-cations related to bile duct	Other gastro-intestinal compli-cations	Infectious compli-cations related to surgery	General surgical compli-cations
Florida	126	37	41	14	9	6-	11-
Bradenton	157	54	54	36+	12	0	6
Daytona Beach	155	38	38	9	5	14	5
Fort Lauderdale	160	40	51	24+	8	8	8
Fort Myers	103	27	27	9	9	0	9
Fort Pierce	112	40	48	8	24	0	8
Ft. Walton Beach	107	0	0	0	0	0	0
Gainesville	115	66	66	16	33	16	0
Jacksonville	118	32	36	18	7	4	7
Lakeland	101	26	35	9	0	22	4
Melbourne	124	53	53	12	6	6	24
Miami-Hialeah	148	35	41	15	13	2	4
Naples	77	58	58	0	19	19	19
Ocala	86	43	43	17	0	0	26
Orlando	102	33	48	21	6	3	12
Panama City	111	22	22	22	0	0	0
Pensacola	117	33	33	8	0	17	8
Sarasota	90-	34	34	13	4	0	17
Tallahassee	119	15	15	0	15	0	0
Tampa	134	35	37	10	8	8	10
West Palm Beach	99-	28	28	5	13	3	8
East South Central	154++	43	48	13	8	10	15
Kentucky	155++	37	41	10	4-	8	15
Lexington	127	0-	0--	0	0	0	0
Louisville	129	33	38	3	3	10	23
Owensboro	77	0	0	0	0	0	0
Tennessee	153++	40	46	12	10	9	12
Chattanooga	165	72+	80	30	21	13	17
Clarksville	150	25	25	0	0	0	0
Jackson	196	54	71	36	0	36	0
Johnson City	93	33	44	5	11	11	11
Knoxville	113	26	26	13	0	0	13
Memphis	151	52	68	32+	8	0	16
Nashville	148	34	36	8	13	10	3
Alabama	149+	47	51	14	8	11	15
Anniston	145	73	91	18	0	55+	0
Birmingham	153	53	57	17	6	11	19
Dothan	191	43	43	43	0	0	0
Florence	167	45	61	15	15	0	30
Gadsden	105	0	0	0	0	0	0
Huntsville	160	40	40	0	0	0	40
Mobile	169	48	56	17	17	13	9
Montgomery	189	22	22	0	11	0	0
Tuscaloosa	190	52	52	17	0	17	17

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Mississippi	1,191	4.10++	10.20	131--	74	1,172
Biloxi-Gulfport	74	4.09	10.61	297+	68	71
Jackson	116	3.29	8.84	78--	60	114
Pascagoula	55	6.43++	10.85	236	55	55
West South Central	11,146	4.31++	9.75	181-	76	10,933
Arkansas	1,541	4.79++	10.37	158--	76	1,506
Fayetteville	56	4.74	10.80	357++	125	55
Fort Smith	105	4.90++	10.77	133	95	102
Little Rock	251	4.92++	11.66	159	56	247
Pine Bluff	42	3.81	10.19	95	95	40
Louisiana	1,662	4.00++	9.90	175	79	1,632
Alexandria	73	5.28++	10.56	68--	55	70
Baton Rouge	156	3.94	8.71	224	83	153
Houma-Thibodaux	56	4.15	9.32	107	54	55
Lafayette	81	5.54++	9.44	160	74	79
Lake Charles	66	4.02	8.67	121	106	65
Monroe	51	3.48	9.90	98	59	50
New Orleans	435	3.66	10.99	179	97	425
Shreveport	91	2.47--	11.55	242	44	90
Oklahoma	1,854	4.90++	9.47	170-	64	1,830
Enid	38	4.63	9.26	184	26	38
Lawton	20	2.43-	9.55	300	0	20
Oklahoma City	435	4.91++	10.05	163	71	426
Tulsa	317	4.46++	9.20	199	60	314

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Compli- cations related to bile duct	Other gastro- intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Mississippi	162++	54+	61+	15	8	12	22
Biloxi-Gulfport	197	85	85	0	0	14	70++
Jackson	149	61	70	18	0	9	44+
Pascagoula	109	36	36	0	0	0	36
West South Central	136	42	45	11	9	9	16
Arkansas	140	28--	30--	7--	7	7	6--
Fayetteville	109	55	55	18	18	18	0
Fort Smith	137	0-	0-	0	0	0	0
Little Rock	117	12-	12--	4	0	8	0
Pine Bluff	75	50	50	0	50	0	0
Louisiana	151+	46	48	9	8	12	17
Alexandria	129	43	43	0	14	14	14
Baton Rouge	163	59	59	0	7	26	20
Houma-Thibodaux	145	55	55	18	0	36	0
Lafayette	89	51	63	38	0	13	13
Lake Charles	154	62	92	0	31	15	46
Monroe	120	100	100	0	60+	40	0
New Orleans	172+	42	42	12	7	5	16
Shreveport	133	44	44	0	0	22	22
Oklahoma	137	44	49	18	9	4--	17
Enid	158	79	132	0	79++	0	53
Lawton	100	0	0	0	0	0	0
Oklahoma City	124	35	38	9	2	7	16
Tulsa	124	51	54	22	6	3	22

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Texas	6,089	4.15++	9.65	191	78	5,965
Abilene	55	4.20	9.73	200	55	55
Amarillo	70	3.67	8.26	171	86	68
Austin	181	3.80	8.27	171	39-	181
Beaumont	178	4.21+	10.19	135-	90	172
Brazoria	51	4.08	10.27	176	39	50
Brownsville	85	4.21	9.13	129	35	85
Bryan	28	4.03	9.04	107	107	28
Corpus Christi	170	5.98++	9.82	141	82	165
Dallas	633	3.68	8.78	186	77	621
El Paso	158	4.24+	10.13	253	76	155
Fort Worth	349	3.56	9.66	252++	80	342
Galveston	74	3.82	10.84	122	41	74
Houston	663	3.53	11.12	198	92	645
Killeen-Temple	69	4.02	9.48	333+	145	67
Laredo	65	7.72++	10.46	200	92	65
Longview	83	4.04	10.53	241	108	82
Lubbock	95	5.01++	10.07	232	53	93
McAllen	145	5.29++	8.41	152	83	141
Midland	37	5.03	7.54	243	81	36
Odessa	35	3.80	9.66	143	86	33
San Angelo	39	3.48	8.44	308	103	38
San Antonio	456	4.22++	10.51	211	77	449
Sherman-Denison	72	4.95+	10.32	306+	83	71
Texarkana	70	4.57	10.59	114	100	69
Tyler	67	3.68	9.15	104-	15	66
Victoria	29	4.22	9.52	138	34	29
Waco	106	4.49+	7.52	170	66	103
Wichita Falls	63	4.36	8.83	95-	63	63
West	14,420	3.18--	8.35	199++	73	14,150
Mountain	4,759	3.96++	8.43	197	67-	4,676
Montana	363	3.73	8.53	154	58	361
Billings	38	3.14	9.03	79	26	38
Great Falls	37	4.08	8.68	81	27	37
Idaho	452	4.12++	7.92	204	44--	449
Boise City	86	4.66+	8.01	209	23	86
Wyoming	182	4.29+	9.83	203	71	178
Casper	18	3.35	9.67	167	56	18
Cheyenne	22	3.19	13.05	273	91	22

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges				
	Within 90 days for any cause	With an event	Total(1)	Compli- cations related to bile duct	Other gastro- intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Texas	131	44	47	10	10	10	17
Abilene	73	55	55	0	0	18	36
Amarillo	118	59	74	29	15	0	29
Austin	94	33	44	6	11	17	11
Beaumont	180	47	47	12	6	0	29
Brazoria	200	80	80	20	20	0	40
Brownsville	118	47	47	24	12	12	0
Bryan	107	0	0	0	0	0	0
Corpus Christi	121	42	42	18	6	6	12
Dallas	119	32	32	3-	10	2	18
El Paso	155	32	32	13	6	0	13
Fort Worth	108	32	44	3	23+	3	15
Galveston	135	41	41	0	0	14	27
Houston	118	37	40	14	9	5	12
Killeen-Temple	134	0	0	0	0	0	0
Laredo	138	31	31	0	0	0	31
Longview	134	49	49	12	0	24	12
Lubbock	118	0-	0-	0	0	0	0
McAllen	64--	43	50	21	7	7	14
Midland	278+	0	0	0	0	0	0
Odessa	152	61	61	0	30	0	30
San Angelo	105	26	26	0	0	0	26
San Antonio	143	62	67	20	9	16	22
Sherman-Denison	155	56	85	14	28	0	42
Texarkana	101	29	29	0	14	0	14
Tyler	76	61	61	15	0	30	15
Victoria	241	103	103	0	34	0	69
Waco	107	39	39	0	10	10	10
Wichita Falls	143	63	63	0	16	16	32
West	133	41	45	11	11++	8	13
Mountain	139	47+	52+	12	13+	10	14
Montana	144	61	61	11	17	11	17
Billings	79	26	26	26	0	0	0
Great Falls	162	0	0	0	0	0	0
Idaho	129	45	56	13	13	16	13
Boise City	116	35	35	12	0	12	12
Wyoming	197+	39	39	6	11	6	17
Casper	111	0	0	0	0	0	0
Cheyenne	136	136	136	45	45	0	45

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Colorado	962	3.61	8.86	199	65	940
Boulder-Longmont	52	3.43	8.92	192	19	52
Colorado Springs	63	2.53--	8.22	190	32	63
Denver	399	3.34	9.50	185	68	388
Fort Collins	66	4.37	8.14	227	61	65
Greeley	59	5.08+	7.95	203	34	58
Pueblo	68	4.42	7.75	206	88	66
New Mexico	600	4.79++	8.27	170	57	593
Albuquerque	122	3.61	7.88	197	57	122
Las Cruces	39	4.16	10.49	179	26	38
Santa Fe	53	6.27++	8.34	264	38	53
Arizona	1,302	3.73+	8.54	203	81	1,275
Phoenix	657	3.51	8.88	207	73	644
Tucson	222	3.15	8.23	243	77	216
Utah	630	4.90++	7.62	225+	73	620
Provo-Orem	109	6.78++	8.34	284+	110	107
Salt Lake City	352	4.56++	7.48	219	77	348
Nevada	268	3.28	8.41	198	71	260
Las Vegas	143	3.16	8.71	210	56	140
Reno	60	3.14	7.27	150	100	58
Pacific	9,661	2.89--	8.31	200++	76	9,474
Washington	1,590	3.44	7.56	226++	77	1,563
Bellingham	55	4.04	7.45	273	55	55
Bremerton	51	3.30	8.57	235	59	49
Olympia	37	2.60-	8.57	243	108	36
Richland	36	2.87	6.72	139	83	35
Seattle	491	3.07--	8.30	222	73	483
Spokane	134	3.25	7.51	358++	82	132
Tacoma	192	3.82	6.35	224	99	188
Vancouver	48	2.82	7.13	125	42	47
Yakima	85	3.74	8.59	212	59	85
Oregon	955	3.14--	7.88	200	84	938
Eugene	78	2.69--	6.91	218	38	78
Medford	55	2.71-	8.07	218	55	55
Portland	249	2.51--	8.25	205	116+	242
Salem	126	3.79	7.91	127-	79	123

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Compli- cations related to bile duct	Other gastro- intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Colorado	147	45	49	11	14	10	11
Boulder-Longmont	173	58	77	0	0	19	38
Colorado Springs	127	48	48	16	16	0	0
Denver	137	44	44	15	13	8	5
Fort Collins	231	15	15	0	15	0	0
Greeley	138	69	69	17	0	34	17
Pueblo	91	30	30	0	0	0	15
New Mexico	126	34	39	12	8	5	13
Albuquerque	115	33	33	16	8	0	8
Las Cruces	237	53	79	53	0	0	26
Santa Fe	57	38	38	0	19	19	0
Arizona	129	49	54	13	13	9	15
Phoenix	109	43	51	11	11	11	17
Tucson	125	56	60	14	19	0	19
Utah	150	55	58	16	16	10	16
Provo-Orem	178	47	47	0	9	9	28
Salt Lake City	147	52	55	14	20	9	11
Nevada	131	46	58	15	4	19	19
Las Vegas	186	64	64	14	7	36+	7
Reno	34-	17	34	34	0	0	0
Pacific	130	38	42	10	10	7	13
Washington	133	36	38	8	10	7	11
Bellingham	218	0	0	0	0	0	0
Bremerton	122	41	41	20	0	0	20
Olympia	139	0	0	0	0	0	0
Richland	57	29	29	0	0	29	0
Seattle	147	27	29	8	12	4	4
Spokane	98	38	38	8	8	15	8
Tacoma	112	27	27	0	0	11	16
Vancouver	149	21	43	43	0	0	0
Yakima	153	24	24	0	0	0	12
Oregon	100--	28-	29--	7	6	1--	12
Eugene	115	13	13	0	13	0	0
Medford	164	0	0	0	0	0	0
Portland	87-	29	29	8	12	0	8
Salem	138	49	57	33	0	0	24

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
California	6,835	2.76--	8.45	194	73	6,699
Anaheim-Santa Ana	483	2.89--	8.72	207	79	472
Bakersfield	192	4.27+	7.72	208	68	187
Chico	80	2.95	8.48	200	100	79
Fresno	187	3.20	8.15	160	112	186
Los Angeles	1,775	2.62--	9.17	196	79	1,720
Merced	47	3.49	7.64	234	43	47
Modesto	128	3.81	7.86	133	86	125
Oakland	473	2.51--	8.68	216	70	468
Oxnard-Ventura	154	3.11	8.41	240	39-	153
Redding	58	3.26	7.67	172	69	56
Riverside	643	3.16--	8.03	182	72	633
Sacramento	335	2.79--	8.13	164	66	330
Salinas	80	2.75-	9.13	150	63	79
San Diego	554	2.70--	7.90	227+	70	541
San Francisco	344	2.10--	9.05	169	47-	337
San Jose	295	2.80--	7.96	180	75	291
Santa Barbara	73	1.92--	8.73	164	110	71
Santa Cruz	55	2.23--	7.64	91-	36	54
Santa Rosa	100	2.23--	8.20	230	30	100
Stockton	120	2.94-	6.27	150	67	119
Vallejo	86	2.40--	8.08	198	70	85
Visalia	96	3.33	6.98	188	73	96
Yuba City	36	3.04	9.64	111	56	36
Alaska	49	3.00	11.24	122	143	48
Anchorage	15	2.67	11.67	200	0	15
Hawaii	232	2.89--	10.65	203	103	226
Honolulu	160	2.77--	11.18	225	106	156

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Total cholecystectomy: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges				
	Within 90 days for any cause	With an event	Total(1)	Compli- cations related to bile duct	Other gastro- intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
California	134	40	45	12	11+	8	13
Anaheim-Santa Ana	144	47	51	21	6	4	17
Bakersfield	160	43	53	16	0	21	16
Chico	114	0	0	0	0	0	0
Fresno	124	54	59	16	5	16	22
Los Angeles	137	35	40	11	10	8	10
Merced	149	64	64	0	0	21	21
Modesto	120	48	48	0	8	40++	0
Oakland	126	38	45	15	11	11	9
Oxnard-Ventura	137	72	78	20	20	7	33
Redding	143	18	18	18	0	0	0
Riverside	126	49	62	9	35++	3	13
Sacramento	133	48	55	18	12	6	15
Salinas	127	89	89	13	25	13	38
San Diego	126	35	41	9	9	6	17
San Francisco	145	18--	18--	9	0	3	6
San Jose	124	31	34	7	3	10	14
Santa Barbara	169	42	70	28	14	14	14
Santa Cruz	56	37	37	0	0	0	37
Santa Rosa	110	30	30	10	10	10	0
Stockton	134	59	59	17	17	8	17
Vallejo	153	35	47	24	0	12	0
Visalia	125	21	21	0	0	10	10
Yuba City	111	56	56	0	0	28	28
Alaska	250	42	42	21	21	0	0
Anchorage	267	67	67	67	0	0	0
Hawaii	97	27	27	0	9	9	9
Honolulu	96	26	26	0	13	6	6

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Partial excision of the large intestine

During 1986, approximately 100,000 hospitalizations took place in which a partial excision of the large intestine was performed for Medicare beneficiaries 65 years of age or over who did not have end stage renal disease and were not enrolled in health maintenance organizations, as discussed in Volume 2. In this section, adverse outcomes for patients with partial excision (or resection) of the large intestine are described. The patients included in this section are a subset of the 100,000 cases analyzed in Volume 2. About 12,300 cases were excluded because the excision was not the primary procedure in the hospitalization. About 12,700 patients who had a colostomy performed were also excluded. A total of 75,211 patients met the criteria for inclusion.

The study population was separated into patients with cancer (principal diagnosis ICD-9-CM 153 or 154) and all other patients, based on clinical judgment that outcomes may be different for the two groups. There were 47,355 patients with cancer and 27,856 patients without cancer. Information is provided about adverse outcomes during the index stay (when the surgery was performed), deaths within a year of surgery, and readmissions for adverse outcomes.

Rates for specific events

The ICD-9-CM codes that were used for selecting cases for this study are provided in Tables 1a and 1b. The diagnoses and procedures (with their ICD-9-CM codes) that were identified with the aid of a panel of general surgeons as signifying potential adverse outcomes following partial excision of the large intestine are also listed. They are the same for both groups of patients. The conditions represented by these diagnoses and procedures are referred to as adverse events. The adverse events are categorized into five event groups:

1. Intestinal obstruction.
2. Other intestinal complications.
3. Infectious complications related to surgery.
4. General surgical complications.
5. Other events.

Tables 1a and 1b also include information on which codes were counted as adverse events if they

occurred in the index stay and which codes were counted if they were the principal diagnosis for a readmission following resection of the large intestine. The time interval from the date of surgery required in order to include a readmission is shown as well. For example, in Event Group 1 (intestinal obstruction), unspecified intestinal obstruction was not counted as an adverse event if it appeared as one of the secondary diagnoses in the record of the index stay because it could have been the reason that the procedure was performed in the first place. However, if it was the principal cause of a readmission within 1 year of the surgery, then it was counted as an event. Other diagnoses, such as gastrointestinal complications, count as events if they occurred either within the index stay or in a subsequent admission (in this case, within 1 year). Finally, some conditions, such as paralytic ileus (in Event Group 2), count only if they occurred within the index stay.

As noted in the introduction, Medicare claims files for hospital stays contain up to five diagnosis codes and three procedure codes. For this study, all diagnosis positions and all procedure positions were examined to identify events in the index stay. However, only the principal diagnosis was considered for readmissions.

Patients with cancer

For patients with cancer (Table 1a), a total of 211.72 adverse events were reported as secondary diagnoses in the index stay per 1,000 procedures. More than one-half of these adverse events, 118.57 events per 1,000 procedures, were in Event Group 3, infectious complications related to surgery. In this group, the major infectious complications were urinary tract infection, site not specified (42.26 events per 1,000 procedures), postoperative infection (22.43), respiratory complications (21.16), pneumonia, organism unspecified (10.35), and septicemia (9.12).

Event Group 4, general surgical complications, accounted for 65.06 events per 1,000 procedures in the index stay, or 31 percent of the total. Events in this group were more evenly split across a number of conditions than was the case with Event Group 3. The most frequently occurring were retention of urine (10.98 events per 1,000 procedures); hemorrhage or hematoma complicating a procedure (8.95); other specified complications of procedures, not elsewhere classified (8.66); accidental puncture or laceration during a

NOTE: For partial excision of the large intestine, records of hospital stays with principal ICD-9-CM procedure code 45.7 and (for cancer patients only) principal ICD-9-CM diagnosis code 153 or 154 were selected.

procedure (7.07); and pulmonary embolism and infarction (6.44).

Other intestinal complications (Event Group 2) accounted for 27.75 adverse events per 1,000 procedures in the index stay, or 13 percent of the total. The only events that occurred in this group were gastrointestinal complications (19.89 events per 1,000 procedures), paralytic ileus (6.50), and persistent postoperative fistula (1.35). Other events (Event Group 5) is composed of a single event, abscess of liver, which accounted for only 0.34 event per 1,000 procedures.

The total number of readmissions with a principal diagnosis signaling an adverse event was 63.79 per 1,000 persons discharged alive (Table 1a). The majority of readmissions with adverse events were in Event Group 1, intestinal obstruction (35.80 readmissions per 1,000 persons discharged alive). These were primarily other specified intestinal obstruction and unspecified intestinal obstruction, with 15.16 and 20.26 readmissions per 1,000 persons discharged alive, respectively. Event Group 4 (general surgical complications) was the next most frequent cause of readmission (11.16 readmissions per 1,000 live discharges). The most common events in this group were incisional ventral hernia, pulmonary embolism and infarction, and reclosure of postoperative disruption of abdominal wall (3.82, 2.08, and 1.48 readmissions per 1,000 live discharges, respectively).

Infectious complications related to surgery (Event Group 3) accounted for 8.95 readmissions per 1,000 persons discharged alive, or 14 percent of the total. About one-half of these were for postoperative infection (3.87). Other intestinal complications (Event Group 2) accounted for 7.80 readmissions per 1,000 persons discharged alive. Most of these were designated as gastrointestinal complications (5.61).

Patients without cancer

Information for patients without cancer as a principal diagnosis is provided in Table 1b. In general, more adverse events followed partial excision of the large intestine for noncancer patients than for cancer patients. Noncancer patients experienced a 45-percent higher rate of adverse events during the index stay than did cancer patients (307.12 for noncancer patients and 211.72 events for cancer patients per 1,000 procedures) and a 23-percent higher rate of readmissions with an adverse event (78.64 and 63.79 readmissions per 1,000 live discharges, respectively). During the index stay, noncancer patients had a 40-percent higher rate of other intestinal complications (Event Group 2), a

52-percent higher rate of infectious complications related to surgery (Event Group 3), and a 36-percent higher rate of general surgical complications (Event Group 4) than cancer patients had.

For readmissions for an adverse event, noncancer and cancer patients were nearly equal in the readmission rate from intestinal obstruction (Event Group 1): 38.69 and 35.80 readmissions per 1,000 persons discharged alive, respectively. However, noncancer patients were 48 percent more likely to be readmitted for other intestinal complications (Event Group 2), 27 percent more likely to be readmitted for infectious complications related to surgery (Event Group 3), and 51 percent more likely to be readmitted for general surgical complications (Event Group 4).

Patterns by age, sex, and race

Tables 2a and 2b contain information on the outcomes following partial excision of the large intestine for all persons combined and by age, sex, and race.

Patients with cancer

In 1986, 47,355 of these procedures were performed on cancer patients, for a rate of 1.77 procedures per 1,000 Medicare enrollees 65 years of age or over (Table 2a). Resection rates were much lower for persons 65-74 years of age (1.34) than for those in the two older age groups (2.44 and 2.42). Overall, women underwent this procedure 19 percent less frequently than did men (1.63 per 1,000 and 2.00 per 1,000, respectively). However, these rates understate the real difference in frequency between men and women because of the older age distribution of women. In each age group, women had 23 or 24 percent fewer partial excisions of the large intestine than men had. Black persons had 20 percent fewer partial excisions of the large intestine than white persons (1.45 and 1.81 per 1,000, respectively).

Average length of stay (ALOS) for persons with cancer who underwent partial excision of the large intestine was 14.87 days. ALOS increased with age from 13.41 days for persons 65-74 years of age to 18.09 days for persons 85 years of age or over. Women had slightly longer ALOS than men had (15.10 days versus 14.58 days). Black persons had longer ALOS than white persons had for all age and sex groups.

Of every 1,000 cancer patients with partial excision of the large intestine, 177 experienced adverse events during the index stay. The number increased with age and was similar for men (182)

and women (173) but was higher for black persons (203) than white persons (176).

More than 20 percent of cancer patients with partial excision of the large intestine died within 1 year of surgery—215 deaths per 1,000 procedures. Of the types of patients studied in this volume, cancer patients with resection had the second highest 1-year death rate. One-year death rates were similar for men and women; however, these rates were much higher for black persons than white persons (261 versus 213 deaths per 1,000 procedures within 1 year).

Among cancer patients, 181 persons had one readmission or more for any cause within 90 days per 1,000 persons discharged alive. This means that nearly one in five cancer patients with resection were readmitted to the hospital within 90 days of their surgery. The 90-day readmission rate rose slightly with age, was higher for men than women, and was similar for black and white persons. The number of persons with one readmission or more because of an adverse event was 56 persons per 1,000 live discharges, or about 6 percent.

The right side of Table 2a contains total readmission rates and rates for the four major event groups shown in Table 1a. The overall readmission rate for cancer patients with resection was 64 readmissions with an event per 1,000 persons discharged alive. This rate decreased with age and was similar for men and women but higher for white than black persons (64 versus 59 readmissions per 1,000 live discharges).

For Event Group 1, intestinal obstruction (the largest event group), the readmission rate was 36 per 1,000 live discharges. The rate declined with age, was a little larger for women than men (38 versus 33 readmissions per 1,000 discharged alive), and was similar for black persons and white persons.

Patients without cancer

In 1986, 27,856 patients without cancer underwent partial excision of the large intestine, for a rate of 1.04 per 1,000 enrollees (Table 2b). The rate increased with age, was higher for women than men (1.11 versus 0.95 procedures per 1,000 enrollees), and was higher for white persons than for black persons (1.07 versus 0.86).

Average length of stay for persons without cancer who underwent partial excision of the large intestine was 16.68 days. ALOS increased with age from 15.21 days for persons 65-74 years of age to 20.47 days for persons 85 years of age or over. There was little difference between men and women in ALOS (16.59 days for men and 16.72 for women). Black persons had longer ALOS than white persons had for all age and sex groups.

The number of persons who experienced adverse events during the index stay was 247 per 1,000 procedures. The number increased with age, was higher for men than women (261 versus 239 persons per 1,000 procedures), and was higher for black persons than for white persons (302 versus 244).

Of patients without cancer who underwent resection, 185 died within 1 year of surgery per 1,000 procedures. This rate was slightly lower than that for persons with cancer. The number of persons without cancer with one readmission or more for any cause within 90 days was 217 per 1,000 persons discharged alive. This rate was higher than that found for persons with cancer.

Of persons without cancer who had resection of the large intestine, 70 per 1,000 live discharges experienced one readmission or more because of an adverse event. This rate was 25 percent greater than that for patients with cancer.

The right side of Table 2b contains total readmission rates and rates for the four major event groups. The total rate was 79 readmissions with an event per 1,000 patients without cancer discharged alive after partial excision of the large intestine. This rate decreased with age and was similar for men and women but higher for black persons than white persons (95 versus 78 readmissions per 1,000 persons discharged alive).

Event Group 1, intestinal obstruction (the largest event group), had a readmission rate of 39 per 1,000 live discharges. This rate increased with age and was similar for men and women but higher for black than white persons (58 versus 37 readmissions per 1,000 live discharges).

Variations by geographic area

Tables 3a and 4a (patients with cancer) and 3b and 4b (patients without cancer) contain data on adverse events following partial excision of the large intestine. Data by metropolitan and rural areas within each State are shown in Tables 3a and 3b, and data by metropolitan statistical area (MSA) are shown in Tables 4a and 4b. The figures were derived from the data in these tables.

The tables by geographic area contain data for the same measures that are shown by age, sex, and race in Tables 2a and 2b. Data for areas in which the rate was significantly different from the national average are annotated with a "+" or "-" if the local rate was different at the $p = 0.05$ level and with a "++" or "--" if the local rate was different at the $p = 0.01$ level. Details on the statistical tests are contained in the appendix.

The data shown in Tables 3a and 3b are summarized by U.S. census region in Tables A and B. Table A contains information on patients

Table A. Selected statistics on partial excision of the large intestine for aged Medicare enrollees with cancer, by region: United States, 1986 index stays

Region	Average length of stay in days	Number of patients per 1,000 procedures		Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions for largest event category per 1,000 live discharges
		With 1 event or more in index stay	Dying within 1 year of surgery	Within 90 days for any cause	With an event	
United States	14.87	177	215	181	56	36
Northeast	16.98	192++	216	173-	50--	33
North Central	14.58	182	226++	189+	59	40+
South	14.71	161--	209	185	55	32-
West	12.16	176	208	171-	63+	40

NOTES: Members of health maintenance organizations and persons with end stage renal disease are excluded. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table B. Selected statistics on partial excision of the large intestine for aged Medicare enrollees without cancer, by region: United States, 1986 index stays

Region	Average length of stay in days	Number of patients per 1,000 procedures		Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions for largest event category per 1,000 live discharges
		With 1 event or more in index stay	Dying within 1 year of surgery	Within 90 days for any cause	With an event	
United States	16.68	247	185	217	70	39
Northeast	19.96	270++	203++	218	64	36
North Central	16.12	249	181	229+	68	36
South	16.20	224--	178	211	72	42
West	13.92	257	181	209	77	40

NOTES: Members of health maintenance organizations and persons with end stage renal disease are excluded. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

with cancer having partial excision of the large intestine; Table B contains the same information for patients without cancer.

As seen in Table A, the longest ALOS for patients with cancer occurred in the Northeast (16.98 days), and the shortest ALOS occurred in the West (12.16 days). The Northeast Region had the highest rate of persons with events in the index stay. This rate was significantly higher than the U.S. rate. On the other hand, compared with the U.S. rate, the Northeast Region had significantly lower rates of persons with readmissions within 90 days for any cause and of persons with one readmission or more with an event. For the most frequent category of events (Event Group 1, intestinal obstruction), readmission rates were lower in the Northeast than for the Nation as a whole, but not significantly lower.

The same general pattern as for cancer patients can be seen for patients without cancer (Table B). The Northeast Region had the longest ALOS (19.96 days), and the shortest ALOS occurred in the West (13.92 days). The Northeast Region had

the highest rate of persons with one event or more in the index stay, and the rate was significantly higher than the U.S. rate. The rate of persons with readmissions for an adverse event was lowest in the Northeast Region.

In the South Region, for both types of patients having a partial excision of the large intestine, the rate of persons with events in the index stay was statistically significantly lower than the U.S. rate. Readmission rates in the South were, in general, not statistically different from the national average. The one exception is for cancer patients, whose readmissions for Event Group 1, intestinal obstruction, were significantly lower in the South compared with the U.S. rate.

The variations across the Nation in the number of persons with readmissions for events related to the index stay per 1,000 persons discharged alive are illustrated in Figures 1a and 1b. No consistent geographical patterns are evident. In some States (for example, Arizona, Utah, and Idaho), readmission rates for adverse events were high for both types of patients. In Oregon, Virginia, and

Maine, readmission rates were relatively low for both types of patients. However, in some States (such as Kansas and Washington), the readmission rate was high or low for cancer patients having partial excision of the large intestine and the reverse was true of patients without cancer. Variations by State for Event Group 1, intestinal obstruction, are shown in Figures 2a and 2b.

Urban-rural patterns

For patients with cancer, the rate of partial excision of the large intestine was higher among residents of urban areas than among residents of rural areas (1.82 and 1.66 procedures per 1,000 enrollees, respectively), as shown in Table 3a. ALOS was higher in urban areas (15.29 days) than in rural areas (13.64 days); this pattern held in all four census regions. The number of persons with one adverse event or more during the index stay and the number dying within 1 year of surgery were similar in urban and rural areas. The probability of readmission for any cause within 90 days of surgery was significantly higher than the national average in rural areas and significantly lower than average in urban areas (194 and 176 persons with a readmission per 1,000 discharged alive, respectively). However, neither urban nor rural areas were significantly different from the national average in the probability of readmission related to an adverse event. Similarly, both urban and rural areas were close to the national average in the rate of readmission from intestinal obstruction (Event Group 1).

For patients without cancer (Table 3b), the urban-rural patterns were generally the same as those for patients with cancer. As with cancer patients, the rate of operations for noncancer patients was lower in rural than in urban areas (0.98 versus 1.07 procedures per 1,000 enrollees). ALOS was longer in urban than in rural areas both nationally and in each region. Unlike cancer cases, the number of persons with one adverse event or more per 1,000 procedures and the number of persons dying within 1 year per 1,000 procedures were significantly lower in rural areas than in the Nation as a whole.

Correlations between rates

Pearson correlation coefficients were computed between several pairs of outcome measures, using MSA-level rates and rates for rural areas within States. This was done to determine whether areas with high rates of one measure of adverse outcome were also high on other measures. MSAs with less than five expected events were excluded from the computation of correlations because of small

sample size. The number of expected events is the product of the national average rate times the number of procedures in an area.

Correlation coefficients were also computed between ALOS and rates of events in the index stay and between ALOS and rates of persons with readmissions. This was done to examine the hypothesis that areas with high ALOS might have high rates of events within the index stay because of the longer time for adverse events to appear. Areas with high ALOS might also have lower rates of readmissions because more problems would be taken care of in the index stay.

Patients with cancer

For patients with cancer, no significant association was found between the number of persons with one event or more in the index stay per 1,000 procedures and the number of persons with one readmission or more with an event per 1,000 live discharges ($r = 0.09$, $n = 130$). Additionally, no association was found between deaths within a year of surgery and the number of persons with one readmission or more with an event per 1,000 live discharges ($r = 0.07$, $n = 130$).

For cancer patients undergoing partial excision of the large intestine, the correlation between ALOS and the rate of adverse events in the index stay was positive and significant at the 0.05 level ($r = 0.25$, $n = 270$). The correlation between ALOS and the rate of readmissions with an event was negative and significant ($r = -0.31$, $n = 144$). These correlations are consistent with the hypothesis described earlier. However, the correlation between ALOS and the rate of readmissions within 90 days for any reason was positive and significant ($r = 0.10$, $n = 267$).

Patients without cancer

The correlations for patients without cancer tended to be similar to those for patients with cancer. There was no significant association between the number of persons with one event or more in the index stay per 1,000 procedures and the number of persons with one readmission or more with an event per 1,000 persons discharged alive ($r = 0.06$, $n = 99$). Also, no association was found between deaths within a year of surgery and the number of persons with one readmission or more with an event per 1,000 persons discharged alive ($r = 0.01$, $n = 99$).

The correlation between ALOS and the rate of adverse events in the index stay was positive and significant at the 0.05 level ($r = 0.27$, $n = 250$). The correlation between ALOS and the rate of readmissions with an event was negative but not

significant at the 0.05 level ($r = -0.15$, $n = 112$).
The correlation between ALOS and the rate of

readmissions within 90 days for any reason was
positive but not significant ($r = 0.24$, $n = 222$).

Table 1a. Partial excision of the large intestine with cancer: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986 index stays (Number of procedures: 47,355. Number of live discharges: 45,257. Partial excision of the large intestine with cancer must include ICD-9-CM principal procedure code 45.7. Stays are excluded if procedure code 46.1 is listed. Stays must also include principal diagnosis code 153 or 154.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmis- sions within(1)		
Total	--	--	--	211.72	63.79
1. Intestinal obstruction(2)	--	--	--	--	35.80
Volvulus	560.2	No	1 year	--	0.38
Other specified intestinal obstruction	560.8	No	1 year	--	15.16
Unspecified intestinal obstruction	560.9	No	1 year	--	20.26
2. Other intestinal complications(2)	--	--	--	27.75	7.80
Fistula of intestine, excluding rectum and anus	569.81	No	90 days	--	0.73
Ulceration of intestine	569.82	No	90 days	--	0.09
Perforation of intestine	569.83	No	90 days	--	0.44
Persistent postoperative fistula	998.6	Yes	90 days	1.35	0.75
Digestive-genital tract fistula, female	619.1	No	90 days	--	0.09
Intestino-vesical fistula	596.1	No	90 days	--	0.04
Gastrointestinal complications	997.4	Yes	1 year	19.89	5.61
Hernia of other specified sites	553.8	No	1 year	--	0.04
Paralytic ileus	560.1	Yes	No	6.50	--

(1) Measured from date of surgery to date of readmission.

(2) For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3) Included only if procedure code 54.61 is not present.

(4) If code 410 is principal diagnosis, code 997.1 is not necessary.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1a. Partial excision of the large intestine with cancer: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986 index stays (Number of procedures: 47,355. Number of live discharges: 45,257. Partial excision of the large intestine with cancer must include ICD-9-CM principal procedure code 45.7. Stays are excluded if procedure code 46.1 is listed. Stays must also include principal diagnosis code 153 or 154.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmis- sions within(1)		
3. Infectious complications related to surgery(2)	--	--	--	118.57	8.95
Other bacterial pneumonia	482	Yes	15 days	3.63	0.18
Bronchopneumonia, organism unspecified	485	Yes	15 days	1.06	0.02
Pneumonia, organism unspecified	486	Yes	15 days	10.35	0.49
Respiratory complications	997.3	Yes	15 days	21.16	0.09
Postoperative infection	998.5	Yes	30 days	22.43	3.87
Other suppurative peritonitis	567.2	No	30 days	--	0.57
Other cellulitis and abscess, upper arm and forearm	682.3	No	30 days	--	0.00
Other cellulitis and abscess, hand, except fingers and thumb	682.4	No	30 days	--	0.00
Unspecified peritonitis	567.9	No	30 days	--	0.07
Other infection	999.3	Yes	30 days	0.55	0.00
Acute cystitis	595.0	Yes	30 days	0.61	0.02
Cystitis, unspecified	595.9	Yes	30 days	0.95	0.07
Urinary tract infection, site not specified	599.0	Yes	30 days	42.26	1.39
Acute pyelonephritis	590.1	Yes	30 days	0.27	0.13
Other pyelonephritis or pyonephrosis, not specified as acute or chronic	590.8	Yes	30 days	0.38	0.13
Infection of kidney, unspecified	590.9	Yes	30 days	0.00	0.02
Septicemia	038	Yes	30 days	9.12	0.95
Other specified peritonitis	567.8	No	30 days	--	0.02
Other cellulitis and abscess, unspecified site	682.9	No	30 days	--	0.02
Other cellulitis and abscess, trunk	682.2	No	30 days	--	0.29
Disruption of operation wound	998.3	Yes	30 days	5.81	0.62

(1) Measured from date of surgery to date of readmission.

(2) For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3) Included only if procedure code 54.61 is not present.

(4) If code 410 is principal diagnosis, code 997.1 is not necessary.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1a. Partial excision of the large intestine with cancer: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986 index stays (Number of procedures: 47,355. Number of live discharges: 45,257. Partial excision of the large intestine with cancer must include ICD-9-CM principal procedure code 45.7. Stays are excluded if procedure code 46.1 is listed. Stays must also include principal diagnosis code 153 or 154.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmissions within(1)		
4. General surgical complications(2)	--	--	--	65.06	11.16
Peripheral vascular complications	997.2	Yes	No	2.68	--
Acute reaction to foreign substance accidentally left during a procedure	998.7	Yes	30 days	0.02	0.02
Unspecified adverse effect of drug, medicinal and biological substance	995.2	Yes	15 days	0.70	0.00
Acute edema of lung, unspecified	518.4	Yes	15 days	1.03	0.00
Pulmonary insufficiency following trauma and surgery	518.5	Yes	15 days	2.77	0.00
Retention of urine	788.2	Yes	30 days	10.98	0.40
Incontinence of urine	788.3	Yes	30 days	0.61	0.00
Other vascular complications	999.2	Yes	30 days	1.65	0.02
Foreign body accidentally left during a procedure	998.4	Yes	30 days	0.27	0.00
Other specified complications of procedures, not elsewhere classified	998.8	Yes	30 days	8.66	0.29
Unspecified complication of procedure, not elsewhere classified	998.9	Yes	30 days	0.40	0.07
Postoperative shock	998.0	Yes	30 days	1.18	0.02
Accidental puncture or laceration during a procedure	998.2	Yes	30 days	7.07	0.00
Hemorrhage or hematoma complicating a procedure	998.1	Yes	15 days	8.95	0.18
Incisional ventral hernia with gangrene	551.21(3)	Yes(3)	1 year	0.00	0.00
Incisional ventral hernia with obstruction	552.21(3)	Yes(3)	1 year	0.59	0.40
Incisional ventral hernia	553.21(3)	Yes(3)	1 year	4.50	3.82
Trigonitis	595.3	Yes	30 days	0.19	0.00
Pulmonary embolism and infarction	415.1	Yes	30 days	6.44	2.08
Phlebitis and thrombophlebitis	451	No	30 days	--	1.08
Other venous embolism and thrombosis	453	No	30 days	--	0.91
Reclosure of postoperative disruption of abdominal wall	54.61	Yes	1 year	4.98	1.48
Acute myocardial infarction	410 and 997.1	Yes	15 days(4)	1.37	0.40
5. Other events(2)	--	--	--	--	--
Abscess of liver	572.0	Yes	90 days	0.34	0.09

(1) Measured from date of surgery to date of readmission.

(2) For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3) Included only if procedure code 54.61 is not present.

(4) If code 410 is principal diagnosis, code 997.1 is not necessary.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex and age: United States, 1986 index stays

Race, sex, and age	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
All persons(2)	47,355	1.77	14.87	177	215	45,257
65-74 years	21,708	1.34	13.41	155	167	21,186
75-84 years	19,556	2.44	15.48	184	229	18,576
85 years or over	6,091	2.42	18.09	231	345	5,495
Men	21,274	2.00	14.58	182	217	20,303
65-74 years	10,891	1.54	13.41	158	174	10,610
75-84 years	8,397	2.88	15.32	196	239	7,934
85 years or over	1,986	2.91	17.87	253	362	1,759
Women	26,081	1.63	15.10	173	213	24,954
65-74 years	10,817	1.19	13.42	152	159	10,576
75-84 years	11,159	2.18	15.60	175	220	10,642
85 years or over	4,105	2.24	18.19	221	336	3,736
White	42,629	1.81	14.70	176	213	40,760
65-74 years	19,321	1.36	13.19	153	164	18,866
75-84 years	17,694	2.48	15.34	183	226	16,824
85 years or over	5,614	2.51	17.85	231	342	5,070
Men	19,223	2.05	14.32	181	214	18,359
65-74 years	9,790	1.57	13.11	155	172	9,539
75-84 years	7,608	2.96	15.10	197	235	7,199
85 years or over	1,825	3.04	17.51	254	360	1,621
Women	23,406	1.65	15.01	171	212	22,401
65-74 years	9,531	1.19	13.27	150	157	9,327
75-84 years	10,086	2.21	15.53	173	219	9,625
85 years or over	3,789	2.32	18.02	220	333	3,449
Black	2,880	1.45	17.84	203	261	2,716
65-74 years	1,424	1.17	16.81	189	212	1,378
75-84 years	1,123	1.92	18.02	210	286	1,043
85 years or over	333	1.70	21.68	240	387	295
Men	1,176	1.48	19.38	213	276	1,101
65-74 years	614	1.18	18.59	200	225	594
75-84 years	444	2.06	19.54	223	320	406
85 years or over	118	2.03	22.86	237	373	101
Women	1,704	1.42	16.78	197	251	1,615
65-74 years	810	1.17	15.46	180	202	784
75-84 years	679	1.84	17.02	202	264	637
85 years or over	215	1.56	21.03	242	395	194

(1)Includes "other events" category.

(2)Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex and age: United States, 1986 index stays

Race, sex, and age	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges				
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
All persons(2)	181	56	64	36	8	9	11
65-74 years	174	59	67	38	8	8	12
75-84 years	182	55	63	35	8	9	11
85 years or over	203	50	56	29	7	11	8
Men	196	56	63	33	9	9	12
65-74 years	184	57	65	35	9	8	13
75-84 years	206	54	62	32	9	10	11
85 years or over	221	55	61	26	8	14	13
Women	169	57	64	38	7	9	10
65-74 years	164	60	69	41	7	9	12
75-84 years	164	56	63	37	7	8	11
85 years or over	195	48	53	31	7	10	5
White	181	57	64	35	8	9	12
65-74 years	173	59	67	38	8	8	13
75-84 years	182	56	63	34	8	9	12
85 years or over	204	52	57	31	7	12	7
Men	196	56	64	33	9	10	12
65-74 years	183	57	64	35	8	8	13
75-84 years	207	55	63	32	9	10	12
85 years or over	220	56	62	27	8	15	12
Women	168	57	64	37	7	9	11
65-74 years	164	60	69	41	7	9	12
75-84 years	163	56	63	36	7	8	12
85 years or over	196	50	55	32	7	10	6
Black	187	52	59	36	7	8	7
65-74 years	180	57	64	36	8	10	10
75-84 years	196	52	58	42	7	7	2
85 years or over	193	34	37	14	7	7	10
Men	209	51	55	32	6	9	8
65-74 years	184	47	54	27	7	10	10
75-84 years	234	57	57	42	5	10	0
85 years or over	257	50	59	20	10	0	30
Women	173	53	61	38	8	8	6
65-74 years	177	64	71	42	9	10	10
75-84 years	171	49	58	42	8	5	3
85 years or over	160	26	26	10	5	10	0

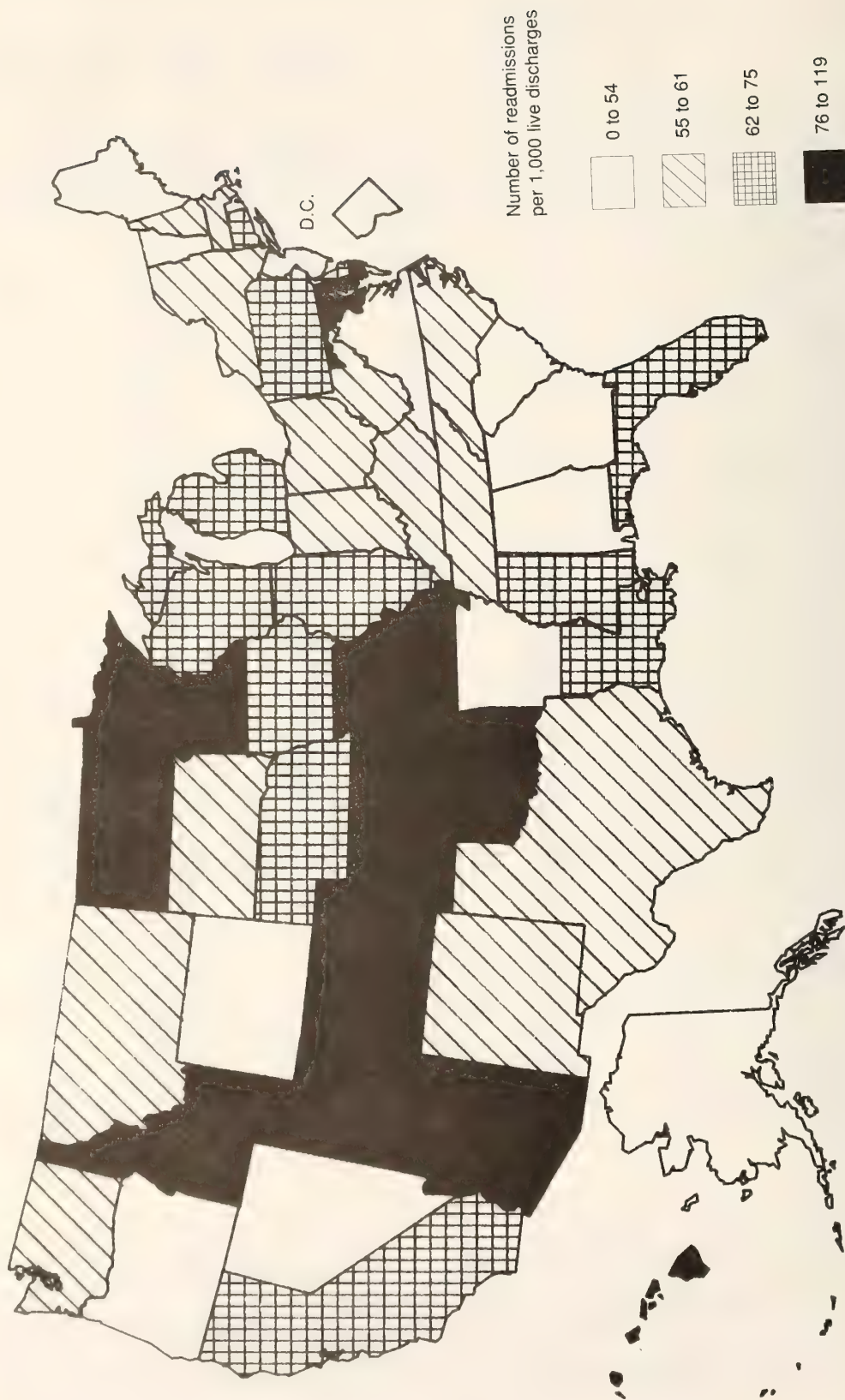
(1)Includes "other events" category.

(2)Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

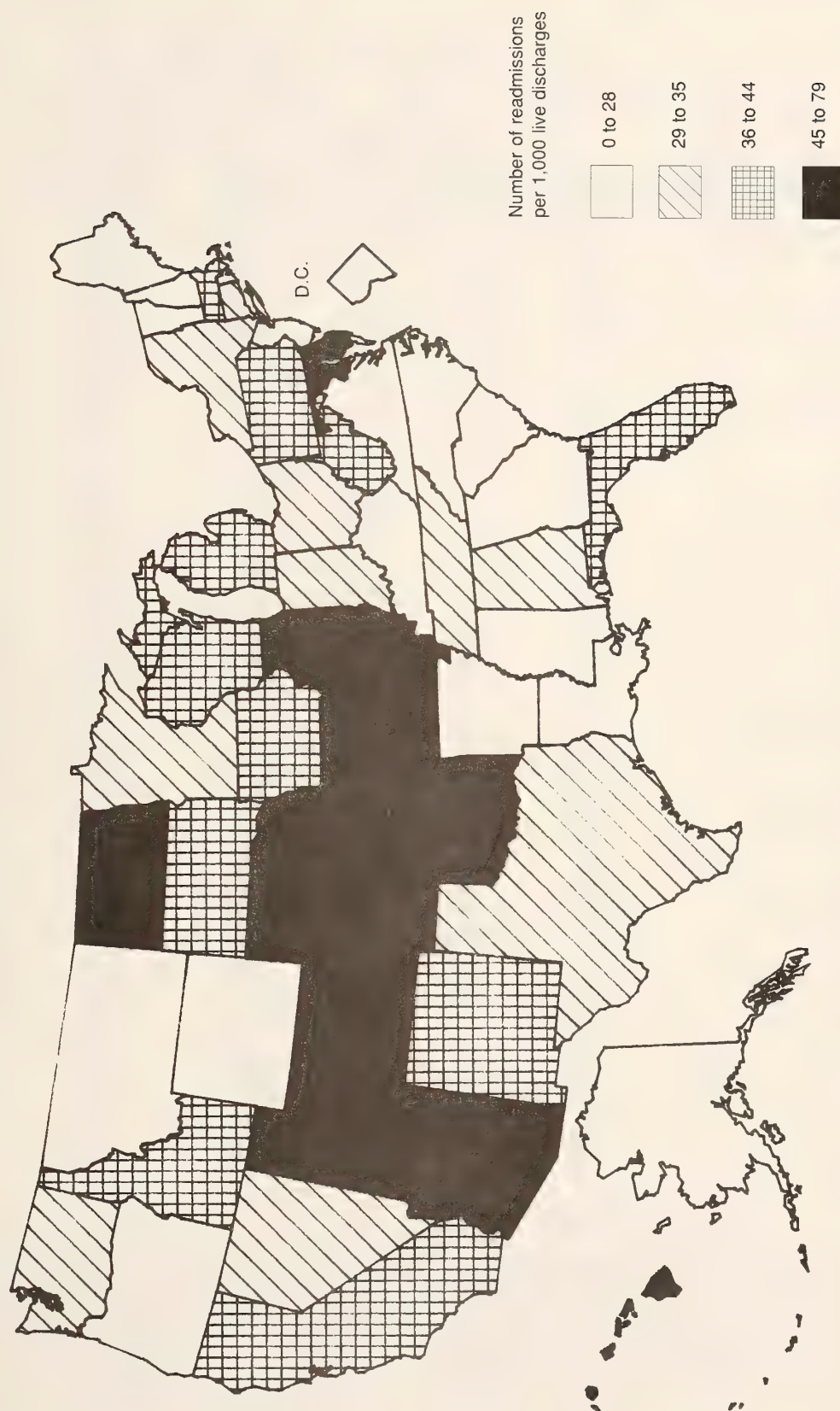
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 1a. Partial excision of the large intestine with cancer: Number of readmissions with an adverse event per 1,000 live discharges for aged Medicare enrollees, by State: 1986 index stays



NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy. Data from the Medicare Statistical System.

Figure 2a. Partial excision of the large intestine with cancer: Number of readmissions with an adverse event in Event Group 1 (intestinal obstruction) per 1,000 live discharges for aged Medicare enrollees, by State: 1986 index stays



NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
United States	47,355	1.77	14.87	177	215	45,257
Metropolitan	35,174	1.82++	15.29	177	216	33,621
Rural	12,181	1.66--	13.64	176	213	11,636
Northeast	12,458	1.98++	16.98	192++	216	11,876
Metropolitan	11,049	1.99++	17.20	189++	217	10,532
Rural	1,409	1.98++	15.31	211++	209	1,344
New England	3,117	1.99++	16.01	204++	212	2,994
Metropolitan	2,653	1.98++	16.20	196+	214	2,550
Rural	464	2.05++	14.94	248++	203	444
Maine	307	2.00+	15.31	208	176	292
Metropolitan	163	1.98	15.30	184	147-	158
Rural	144	2.03	15.31	236	208	134
New Hampshire	217	1.89	15.02	230	249	206
Metropolitan	137	1.85	15.99	226	255	128
Rural	80	1.97	13.35	238	238	78
Vermont	118	1.88	17.74	339++	263	112
Metropolitan	17	1.63	18.00	353	294	16
Rural	101	1.93	17.69	337++	257	96
Massachusetts	1,376	1.94++	16.96	209++	221	1,321
Metropolitan	1,267	1.92++	17.24	209++	228	1,213
Rural	109	2.16	13.66	211	138-	108
Rhode Island	317	2.40++	15.83	117--	218	301
Metropolitan	317	2.40++	15.83	117--	218	301
Rural	0	0.00	0.00	0	0	0
Connecticut	782	1.97++	14.71	201	191	762
Metropolitan	752	1.96+	14.79	202	193	734
Rural	30	2.47	12.73	167	133	28
Middle Atlantic	9,341	1.98++	17.31	188++	217	8,882
Metropolitan	8,396	1.99++	17.51	187+	217	7,982
Rural	945	1.95++	15.50	193	213	900
New York	4,157	1.94++	18.27	191+	221	3,943
Metropolitan	3,729	1.94++	18.53	192+	222	3,538
Rural	428	1.94	16.04	180	213	405
New Jersey	1,823	1.99++	18.50	202++	226	1,727
Metropolitan	1,823	1.99++	18.50	202++	226	1,727
Rural	0	0.00	0.00	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
United States	181	56	64	36	8	9	11
Metropolitan	176-	55	63	35	8	8	11
Rural	194++	59	67	37	8	10	12
Northeast	173-	50--	57--	33	7	7-	10
Metropolitan	171--	50--	57--	33	7	7	10
Rural	186	54	59	35	6	6	12
New England	177	48-	56	32	7	8	10
Metropolitan	175	50	58	34	7	7	11
Rural	194	41	45	20-	9	11	5
Maine	223	51	51	24	10	10	7
Metropolitan	247	57	57	25	0	19	13
Rural	194	45	45	22	22	0	0
New Hampshire	189	53	58	19	5	15	19
Metropolitan	172	47	47	23	0	0	23
Rural	218	64	77	13	13	38	13
Vermont	214	27	27	18	0	9	0
Metropolitan	0	0	0	0	0	0	0
Rural	250	31	31	21	0	10	0
Massachusetts	179	46	57	37	2--	8	10
Metropolitan	183	49	61	40	2-	8	11
Rural	130	9-	9-	9	0	0	0
Rhode Island	143	43	50	23	0	13	13
Metropolitan	143	43	50	23	0	13	13
Rural	0	0	0	0	0	0	0
Connecticut	163	55	64	34	18++	4	8
Metropolitan	162	53	61	33	19++	3	7
Rural	179	107	143	71	0	36	36
Middle Atlantic	171-	51-	58-	33	7	7-	10
Metropolitan	170-	50--	57-	32	7	7	10
Rural	182	61	66	42	4	3	16
New York	164--	49-	56-	32	6	6-	11
Metropolitan	164--	49	56	32	7	6-	11
Rural	168	47	49	40	0	2	7
New Jersey	170	42--	45--	24--	8	7	5--
Metropolitan	170	42--	45--	24--	8	7	5--
Rural	0	0	0	0	0	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Pennsylvania	3,361	2.04++	15.47	176	207	3,212
Metropolitan	2,844	2.06++	15.54	171	206	2,717
Rural	517	1.95+	15.05	203	213	495
North Central	12,595	1.82++	14.58	182	226++	12,003
Metropolitan	8,003	1.82+	15.28	182	228++	7,624
Rural	4,592	1.83+	13.36	180	223	4,379
East North Central	8,529	1.80	15.02	178	229++	8,126
Metropolitan	6,212	1.80	15.54	180	229++	5,916
Rural	2,317	1.79	13.64	172	227	2,210
Ohio	2,242	1.77	15.39	193	239++	2,134
Metropolitan	1,757	1.78	15.78	196+	236+	1,672
Rural	485	1.76	13.97	184	247	462
Indiana	1,093	1.75	14.76	144--	249+	1,039
Metropolitan	725	1.81	15.28	150-	250+	687
Rural	368	1.65	13.73	130--	247	352
Illinois	2,376	1.88++	16.15	187	234+	2,254
Metropolitan	1,806	1.90++	16.66	187	230	1,719
Rural	570	1.83	14.53	188	246	535
Michigan	1,613	1.64--	14.25	160	210	1,540
Metropolitan	1,201	1.61--	14.70	159	227	1,140
Rural	412	1.73	12.95	163	160--	400
Wisconsin	1,205	1.97++	13.38	186	207	1,159
Metropolitan	723	1.96+	13.78	188	195	698
Rural	482	1.99+	12.77	183	224	461
West North Central	4,066	1.89++	13.65	190+	221	3,877
Metropolitan	1,791	1.89++	14.38	192	223	1,708
Rural	2,275	1.88++	13.07	189	219	2,169
Minnesota	710	1.79	12.00	238++	208	675
Metropolitan	329	1.75	12.31	286++	234	311
Rural	381	1.82	11.73	197	186	364
Iowa	877	2.17++	13.09	197	204	848
Metropolitan	312	2.28++	14.13	176	202	304
Rural	565	2.11++	12.52	209	205	544
Missouri	1,212	1.85	15.11	177	224	1,154
Metropolitan	742	1.94+	15.71	175	218	706
Rural	470	1.72	14.17	179	234	448

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Pennsylvania	181	58	67	40	7	8	12
Metropolitan	178	55	65	39	6	9	11
Rural	194	73	79	44	8	4	22
North Central	189+	59	69	40+	7	10	12
Metropolitan	184	56	65	37	7	9	11
Rural	198++	65+	76+	45++	7	11	12
East North Central	187	56	65	38	7	9	11
Metropolitan	182	52	61	35	7	9	10
Rural	200+	67+	76	45	8	11	12
Ohio	202+	54	61	31	7	13	9
Metropolitan	198	50	59	32	5	14	7
Rural	219+	67	69	28	11	11	17
Indiana	191	47	55	33	5	7	11
Metropolitan	183	44	54	31	4	4	15
Rural	205	54	57	37	6	11	3
Illinois	181	60	71	46+	7	8	12
Metropolitan	173	54	63	41	7	6	10
Rural	207	80+	97+	62+	6	13	17
Michigan	190	54	64	38	5	10	10
Metropolitan	186	54	66	38	6	10	12
Rural	200	53	58	40	3	10	5
Wisconsin	161	64	73	39	13	9	13
Metropolitan	155	57	63	30	13	7	13
Rural	171	74	89	52	13	11	13
West North Central	194+	66+	77++	44+	8	11	13
Metropolitan	192	70+	78	43	10	11	14
Rural	196	62	75	45	6	11	12
Minnesota	190	71	79	30	13	18+	18
Metropolitan	196	80	87	32	13	19	23
Rural	184	63	71	27	14	16	14
Iowa	166	58	68	44	5	9	11
Metropolitan	164	66	72	46	3	10	13
Rural	167	53	66	42	6	9	9
Missouri	184	68	77	46	10	10	12
Metropolitan	176	68	75	42	13	8	11
Rural	196	67	80	51	4	11	13

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
North Dakota	155	1.81	13.92	200	206	146
Metropolitan	46	2.00	14.41	174	261	41
Rural	109	1.74	13.72	211	183	105
South Dakota	180	1.87	13.96	161	250	169
Metropolitan	49	2.40	13.39	82	286	47
Rural	131	1.73	14.18	191	237	122
Nebraska	417	1.99+	13.53	177	221	400
Metropolitan	125	1.78	14.06	200	232	118
Rural	292	2.09++	13.31	168	216	282
Kansas	515	1.67	13.34	159	250	485
Metropolitan	188	1.52-	13.65	144	223	181
Rural	327	1.78	13.16	168	266+	304
South	14,769	1.65--	14.71	161--	209	14,109
Metropolitan	9,941	1.73--	15.05	164--	209	9,498
Rural	4,828	1.50--	14.02	155--	210	4,611
South Atlantic	8,150	1.75	14.61	155--	204-	7,801
Metropolitan	6,097	1.84++	14.87	157--	202--	5,834
Rural	2,053	1.52--	13.82	149--	210	1,967
Delaware	161	2.29++	14.20	118-	224	150
Metropolitan	99	2.23+	13.35	121	222	93
Rural	62	2.39+	15.55	113	226	57
Maryland	838	1.92+	15.16	211+	226	793
Metropolitan	770	1.95+	15.39	216++	223	727
Rural	68	1.64	12.63	162	250	66
Dist. of Columbia	122	1.84	15.52	139	238	116
Metropolitan	122	1.84	15.52	139	238	116
Rural	0	0.00	0.00	0	0	0
Virginia	911	1.62--	15.42	137--	191	879
Metropolitan	585	1.65	15.71	126--	190	562
Rural	326	1.55--	14.89	156	193	317
West Virginia	405	1.66	14.88	131--	212	392
Metropolitan	173	1.91	15.60	116-	231	166
Rural	232	1.51--	14.35	142	198	226
North Carolina	1,023	1.48--	14.50	186	200	985
Metropolitan	536	1.55--	15.85	198	188	518
Rural	487	1.42--	13.02	172	214	467

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges				
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
North Dakota	219	75	89	68	7	0	14
Metropolitan	146	0	0	0	0	0	0
Rural	248	105	124+	95+	10	0	19
South Dakota	284++	47	59	36	0	6	18
Metropolitan	213	64	64	21	0	0	43
Rural	311++	41	57	41	0	8	8
Nebraska	210	65	75	45	5	13	13
Metropolitan	237	68	68	42	8	8	8
Rural	199	64	78	46	4	14	14
Kansas	225+	70	91	58	8	12	12
Metropolitan	271++	83	116	77+	11	17	11
Rural	197	63	76	46	7	10	13
South Metropolitan	185	55	62	32-	8	10	12
	179	57	63	34	7	9	12
Rural	199++	53	60	29--	8	11	12
South Atlantic	168--	57	63	33	8	9	12
Metropolitan	164--	58	65	35	8	9	13
Rural	180	51	57	27-	9	10	11
Delaware	173	60	67	47	0	7	13
Metropolitan	172	75	86	65	0	11	11
Rural	175	35	35	18	0	0	18
Maryland	166	67	83	48	14	10	11
Metropolitan	162	66	83	50	12	8	12
Rural	212	76	91	30	30	30	0
Dist. of Columbia	138	34	34	17	0	9	9
Metropolitan	138	34	34	17	0	9	9
Rural	0	0	0	0	0	0	0
Virginia	172	48	52	28	7	7	10
Metropolitan	165	55	62	36	5	9	12
Rural	183	35-	35-	16--	9	3	6
West Virginia	168	56	61	36	3	10	13
Metropolitan	175	78	78	42	6	18	12
Rural	164	40	49	31	0	4	13
North Carolina	152-	54	59	28	10	10	10
Metropolitan	154	56	58	27	10	8	14
Rural	150	51	60	30	11	13	6

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
South Carolina	525	1.60-	15.59	154	181-	503
Metropolitan	298	1.59	15.51	141	168-	287
Rural	227	1.60	15.69	172	198	216
Georgia	753	1.34--	14.70	146-	208	717
Metropolitan	436	1.39--	15.51	158	181	419
Rural	317	1.28--	13.60	129-	246	298
Florida	3,412	2.00++	14.07	145--	203	3,266
Metropolitan	3,078	2.03++	14.25	147--	204	2,946
Rural	334	1.75	12.45	120--	192	320
East South Central	2,640	1.53--	15.71	165	213	2,510
Metropolitan	1,444	1.65--	16.40	163	221	1,370
Rural	1,196	1.40--	14.87	166	203	1,140
Kentucky	674	1.59--	15.91	162	200	643
Metropolitan	329	1.80	16.32	167	191	316
Rural	345	1.44--	15.51	157	209	327
Tennessee	914	1.66-	15.94	160	224	865
Metropolitan	606	1.77	16.66	147-	244	573
Rural	308	1.48--	14.54	185	185	292
Alabama	645	1.39--	15.42	175	209	611
Metropolitan	417	1.48--	15.98	180	218	392
Rural	228	1.26--	14.39	167	193	219
Mississippi	407	1.40--	15.30	165	214	391
Metropolitan	92	1.39--	16.91	185	185	89
Rural	315	1.41--	14.83	159	222	302
West South Central	3,979	1.54--	14.26	169	218	3,798
Metropolitan	2,400	1.53--	14.68	179	219	2,294
Rural	1,579	1.56--	13.63	155-	217	1,504
Arkansas	512	1.59--	15.00	176	203	496
Metropolitan	164	1.62	17.25	232	238	157
Rural	348	1.58-	13.94	149	187	339
Louisiana	632	1.52--	15.51	182	220	600
Metropolitan	419	1.56--	15.92	181	234	399
Rural	213	1.44--	14.70	183	192	201
Oklahoma	624	1.65	14.05	165	236	591
Metropolitan	296	1.64	14.04	176	223	282
Rural	328	1.65	14.06	155	247	309

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Intestinal obstruction	Other intestinal complications	Infectious complications related to surgery	General surgical complications
South Carolina	189	52	52	12--	10	16	14
Metropolitan	174	45	45	14--	14	10	7
Rural	208	60	60	9-	5	23	23
Georgia	187	46	47	25	3	4	14
Metropolitan	179	53	53	31	2	0-	17
Rural	198	37	40	17-	3	10	10
Florida	166-	61	69	37	9	9	13
Metropolitan	163--	59	66	35	8	10	13
Rural	194	81	91	56	16	3	16
East South Central	215++	53	59	30	4-	11	14
Metropolitan	199	50	55	32	4	8	11
Rural	233++	55	63	28	4	14	17
Kentucky	205	53	59	28	3	12	16
Metropolitan	187	54	57	28	6	6	16
Rural	223	52	61	28	0	18	15
Tennessee	206	50	59	34	5	7	14
Metropolitan	195	44	52	31	5	7	9
Rural	226	62	72	38	3	7	24
Alabama	213	52	54	29	3	15	7
Metropolitan	230+	59	61	38	0	13	10
Rural	183	41	41	14	9	18	0
Mississippi	253++	59	66	28	8	10	20
Metropolitan	135	45	45	22	11	0	11
Rural	288++	63	73	30	7	13	23
West South Central	200++	55	61	31	8	11	12
Metropolitan	203++	56	61	31	7	10	13
Rural	196	54	61	31	9	11	9
Arkansas	210	36-	38--	10--	14	2	12
Metropolitan	229	38	45	0--	19	0	25
Rural	201	35-	35-	15--	12	3	6
Louisiana	215+	53	63	28	8	15	12
Metropolitan	213	48	55	25	8	13	10
Rural	219	65	80	35	10	20	15
Oklahoma	220+	73	80	47	5	17	10
Metropolitan	195	64	71	50	7	7	7
Rural	243+	81	87	45	3	26+	13

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Texas	2,211	1.51--	13.80	166	216	2,111
Metropolitan	1,521	1.49--	14.18	174	212	1,456
Rural	690	1.54--	12.94	148-	225	655
West	7,533	1.66--	12.16	176	208	7,269
Metropolitan	6,181	1.70--	12.31	172	210	5,967
Rural	1,352	1.51--	11.51	196	197	1,302
Mountain	1,838	1.53--	12.31	191	213	1,765
Metropolitan	1,172	1.63--	12.51	189	212	1,128
Rural	666	1.39--	11.95	194	213	637
Montana	177	1.82	12.08	164	175	173
Metropolitan	38	1.79	13.42	211	263	37
Rural	139	1.83	11.71	151	151-	136
Idaho	177	1.61	12.83	237	226	168
Metropolitan	39	2.11	12.51	154	231	39
Rural	138	1.51-	12.92	261+	225	129
Wyoming	45	1.06--	13.04	200	133	45
Metropolitan	13	1.06-	11.85	154	77	13
Rural	32	1.06--	13.53	219	156	32
Colorado	450	1.69	12.52	167	220	428
Metropolitan	355	1.76	12.82	177	211	341
Rural	95	1.46-	11.39	126	253	87
New Mexico	140	1.12--	12.08	186	207	136
Metropolitan	65	1.26--	13.11	246	154	63
Rural	75	1.02--	11.19	133	253	73
Arizona	568	1.63-	12.48	194	210	549
Metropolitan	447	1.73	12.75	188	217	429
Rural	121	1.33--	11.49	215	182	120
Utah	159	1.24--	11.04	220	226	151
Metropolitan	123	1.32--	11.15	236	211	116
Rural	36	1.02--	10.69	167	278	35
Nevada	122	1.49-	11.95	205	254	115
Metropolitan	92	1.43-	11.28	152	228	90
Rural	30	1.72	14.00	367+	333	25

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Texas	189	55	61	33	7	9	12
Metropolitan	199	58	63	33	5	11	14
Rural	165	47	56	32	11	6	8
West	171-	63+	70	40	11+	8	10
Metropolitan	171	62	69	41	11+	8	9
Rural	171	67	74	39	10	10	15
Mountain	183	71+	82+	49+	13	11	9
Metropolitan	188	68	80	51+	14+	9	5--
Rural	174	75	86	46	11	14	16
Montana	208	52	58	23	12	17	6
Metropolitan	270	27	27	27	0	0	0
Rural	191	59	66	22	15	22	7
Idaho	185	77	95	36	30+	12	18
Metropolitan	154	51	77	26	51	0	0
Rural	194	85	101	39	23	16	23
Wyoming	133	0	0	0	0	0	0
Metropolitan	0	0	0	0	0	0	0
Rural	188	0	0	0	0	0	0
Colorado	159	86+	100+	65+	14	7	14
Metropolitan	167	73	88	59	15	9	6
Rural	126	138++	149++	92+	11	0	46+
New Mexico	184	59	59	37	0	7	15
Metropolitan	238	63	63	63	0	0	0
Rural	137	55	55	14	0	14	27
Arizona	209	75	89	56	15	11	7
Metropolitan	217	79	96	58	16	12	9
Rural	183	58	67	50	8	8	0
Utah	159	86	93	60	7	26	0
Metropolitan	147	69	69	43	9	17	0
Rural	200	143	171	114	0	57	0
Nevada	157	35	43	35	9	0	0
Metropolitan	156	33	33	22	11	0	0
Rural	160	40	80	80	0	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Pacific	5,695	1.71--	12.11	171	206	5,504
Metropolitan	5,009	1.71-	12.26	167	210	4,839
Rural	686	1.64-	11.07	198	181-	665
Washington	807	1.75	10.91	191	219	782
Metropolitan	608	1.75	11.01	197	234	589
Rural	199	1.73	10.61	171	176	193
Oregon	428	1.41--	11.31	203	171-	416
Metropolitan	261	1.44--	11.84	203	180	254
Rural	167	1.37--	10.47	204	156-	162
California	4,299	1.74	12.33	164-	209	4,148
Metropolitan	4,026	1.73	12.40	161--	209	3,885
Rural	273	1.85	11.33	209	209	263
Alaska	32	1.96	18.75	281	94	32
Metropolitan	13	2.31	21.31	231	154	13
Rural	19	1.77	17.00	316	53	19
Hawaii	129	1.61	13.44	147	186	126
Metropolitan	101	1.75	13.97	139	188	98
Rural	28	1.24-	11.54	179	179	28

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Pacific	168--	61	66	38	10	8	10
Metropolitan	168-	61	66	38	10	8	10
Rural	167	59	62	33	9	6	14
Washington	169	51	55	35	9	6	5
Metropolitan	160	53	58	37	8	5	7
Rural	197	47	47	26	10	10	0
Oregon	127--	38	38-	22	5	2	10
Metropolitan	122--	39	39	24	4	4	8
Rural	136	37	37	19	6	0	12
California	169-	64+	69	39	10	9	12
Metropolitan	170	63	68	39	10	9	11
Rural	156	72	76	34	11	8	23
Alaska	156	31	31	0	0	0	31
Metropolitan	154	0	0	0	0	0	0
Rural	158	53	53	0	0	0	53
Hawaii	246	95	119+	79+	40++	0	0
Metropolitan	245	82	102	51	51++	0	0
Rural	250	143	179	179++	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
United States	47,355	1.77	14.87	177	215	45,257
Northeast	12,458	1.98++	16.98	192++	216	11,876
New England	3,117	1.99++	16.01	204++	212	2,994
Maine	307	2.00+	15.31	208	176	292
Bangor	24	1.50	12.38	83	167	24
Lewiston-Auburn	31	2.30	17.00	290	161	28
Portland	108	2.04	15.46	176	139-	106
New Hampshire	217	1.89	15.02	230	249	206
Manchester	70	1.58	17.96	186	229	67
Portsmouth	67	2.25	13.94	269	284	61
Vermont	118	1.88	17.74	339++	263	112
Burlington	17	1.63	18.00	353	294	16
Massachusetts	1,376	1.94++	16.96	209++	221	1,321
Boston	850	1.98++	17.75	212+	212	817
New Bedford	117	1.79	17.06	205	239	112
Pittsfield	36	1.78	17.58	306	333	35
Springfield	125	1.73	16.11	200	312+	115
Worcester	139	1.95	15.22	180	216	134
Rhode Island	317	2.40++	15.83	117--	218	301
Providence	317	2.40++	15.83	117--	218	301
Connecticut	782	1.97++	14.71	201	191	762
Bridgeport	186	1.92	14.75	156	204	182
Hartford	309	1.97	15.07	230+	175	303
New Haven	200	1.94	14.60	220	220	193
New London	57	2.06	14.07	140	158	56

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges				
	Within 90 days for any cause	With an event	Total (1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
United States	181	56	64	36	8	9	11
Northeast	173-	50--	57--	33	7	7-	10
New England	177	48-	56	32	7	8	10
Maine	223	51	51	24	10	10	7
Bangor	417+	42	42	0	0	42	0
Lewiston-Auburn	321	71	71	36	0	36	0
Portland	189	57	57	28	0	9	19
New Hampshire	189	53	58	19	5	15	19
Manchester	149	45	45	15	0	0	30
Portsmouth	197	49	49	33	0	0	16
Vermont	214	27	27	18	0	9	0
Burlington	0	0	0	0	0	0	0
Massachusetts	179	46	57	37	2--	8	10
Boston	173	47	60	39	4	2-	15
New Bedford	241	63	80	54	0	27	0
Pittsfield	257	114	143	86	0	57	0
Springfield	200	52	52	35	0	17	0
Worcester	164	37	37	22	0	7	7
Rhode Island	143	43	50	23	0	13	13
Providence	143	43	50	23	0	13	13
Connecticut	163	55	64	34	18++	4	8
Bridgeport	170	66	82	49	27+	0	5
Hartford	142	50	53	33	10	3	7
New Haven	187	52	62	26	26+	5	5
New London	161	36	36	0	18	0	18

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Middle Atlantic	9,341	1.98++	17.31	188++	217	8,882
New York	4,157	1.94++	18.27	191+	221	3,943
Albany	216	1.88	18.56	194	250	205
Binghamton	65	1.83	15.72	246	231	63
Buffalo	228	1.70	17.71	206	228	213
Elmira	24	1.75	12.71	167	292	22
Glens Falls	39	2.56	15.56	154	205	38
Nassau-Suffolk	589	1.98+	18.14	187	211	564
New York	1,962	1.97++	19.67	188	222	1,856
Niagara Falls	55	1.78	17.44	218	273	54
Orange County	59	1.94	13.75	102	203	57
Poughkeepsie	62	2.23	15.69	306+	210	56
Rochester	182	1.77	17.12	253+	203	173
Syracuse	152	2.02	16.05	151	204	146
Utica-Rome	96	2.05	16.00	188	250	91
New Jersey	1,823	1.99++	18.50	202++	226	1,727
Atlantic City	114	2.46++	18.22	289++	219	106
Bergen-Passaic	372	2.17++	16.96	164	223	354
Jersey City	110	1.72	20.25	136	291	101
Middlesex	170	1.87	18.76	218	206	164
Monmouth-Ocean	318	2.06+	18.25	154	214	305
Newark	406	1.92	19.70	219+	222	390
Trenton	85	2.21	18.60	294+	188	82
Vineland	32	1.95	18.56	219	438+	28
Pennsylvania	3,361	2.04++	15.47	176	207	3,212
Allentown	187	1.98	14.01	198	155-	177
Altoona	36	1.74	15.47	111	278	31
Beaver County	55	2.00	12.82	164	273	54
Erie	77	2.18	14.65	195	208	74
Harrisburg	143	1.96	13.11	161	196	139
Johnstown	81	2.01	14.37	210	148	81
Lancaster	106	2.21+	13.70	142	179	103
Philadelphia	1,173	2.06++	17.31	194	209	1,108
Pittsburgh	635	1.96+	16.21	156	238	602
Reading	97	2.00	13.90	113-	144-	94
Scranton	261	2.12++	15.00	165	241	249
Sharon	40	2.10	13.43	175	250	37
State College	22	2.19	13.09	136	136	21
Williamsport	37	2.19	12.97	216	108	36
York	96	1.98	13.50	188	146	94

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Middle Atlantic	171-	51-	58-	33	7	7-	10
New York	164--	49-	56-	32	6	6-	11
Albany	190	24--	24--	5-	5	15	0
Binghamton	127	32	32	0	0	0	32
Buffalo	221	38	42	28	9	0	5
Elmira	91	0	0	0	0	0	0
Glens Falls	132	26	53	53	0	0	0
Nassau-Suffolk	138--	35--	48	27	11	0-	11
New York	171	59	65	36	7	9	13
Niagara Falls	185	56	111	74	19	0	19
Orange County	211	70	70	35	0	18	18
Poughkeepsie	179	54	54	36	0	18	0
Rochester	150	58	58	35	12	0	12
Syracuse	89--	41	55	34	0	7	14
Utica-Rome	132	33	33	33	0	0	0
New Jersey	170	42--	45--	24--	8	7	5--
Atlantic City	179	75	85	47	19	9	9
Bergen-Passaic	181	45	51	37	3	8	3
Jersey City	228	20	20	0	20	0	0
Middlesex	128-	30	30-	0--	6	12	12
Monmouth-Ocean	148	23--	23--	16-	0	7	0
Newark	167	46	46	21-	13	5	8
Trenton	183	73	73	49	12	0	12
Vineland	179	0	0	0	0	0	0
Pennsylvania	181	58	67	40	7	8	12
Allentown	124-	51	51	28	6	11	6
Altoona	290	65	65	32	32	0	0
Beaver County	315+	19	19	0	0	19	0
Erie	257	108	108	95+	0	0	14
Harrisburg	180	43	65	43	7	0	14
Johnstown	235	74	74	25	12	12	25
Lancaster	97--	39	39	10	10	10	10
Philadelphia	165	50	58	38	5	11	4--
Pittsburgh	221+	71	90	51	10	13	15
Reading	160	53	53	21	0	11	21
Scranton	153	36	36-	20	0	0	16
Sharon	135	108	162	135+	0	0	27
State College	143	95	143	0	95+	48	0
Williamsport	194	111	139	83	0	0	56
York	128	11	11-	11	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number of per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
North Central	12,595	1.82++	14.58	182	226++	12,003
East North Central	8,529	1.80	15.02	178	229++	8,126
Ohio	2,242	1.77	15.39	193	239++	2,134
Akron	134	1.77	14.72	231	291	125
Canton	118	2.27+	15.13	186	203	116
Cincinnati	326	2.05+	15.33	153	187	317
Cleveland	418	1.72	17.09	220+	234	393
Columbus	230	1.89	16.07	200	248	219
Dayton	159	1.54	15.04	201	239	150
Hamilton	30	1.15--	13.27	200	100	29
Lima	42	2.15	13.29	71	310	41
Lorain-Elyria	38	1.39	15.47	289	289	36
Mansfield	35	2.30	17.74	200	314	33
Steubenville	33	1.50	16.12	91	303	31
Toledo	135	1.91	16.04	193	252	127
Youngstown	113	1.63	16.58	186	221	109
Indiana	1,093	1.75	14.76	144--	249+	1,039
Anderson	21	1.22-	15.62	190	286	21
Bloomington	16	2.02	14.56	63	250	16
Elkhart-Goshen	32	2.05	11.69	125	125	32
Evansville	70	2.03	14.50	143	257	68
Fort Wayne	69	1.84	13.90	130	232	67
Gary-Hammond	94	1.54	17.17	117	234	86
Indianapolis	190	1.60	16.17	179	263	177
Kokomo	16	1.48	14.38	125	438	14
Lafayette	24	2.14	13.58	125	333	21
Muncie	29	2.11	18.24	103	276	28
South Bend	74	2.23	14.20	95-	257	70
Terre Haute	36	1.84	13.83	278	194	35
Illinois	2,376	1.88++	16.15	187	234+	2,254
Aurora-Elgin	62	2.00	14.82	48--	194	60
Bloomington	27	2.13	15.59	185	259	26
Champaign	26	1.94	11.65	231	308	26
Chicago	1,097	1.80	17.25	199	226	1,044
Decatur	35	2.19	17.43	229	257	32
Joliet	51	1.82	16.96	196	294	47
Kankakee	28	2.33	17.04	143	179	27
Lake County	80	2.22	16.39	200	238	79
Peoria	92	2.11	16.55	185	217	88
Rockford	60	2.12	13.83	150	250	54
Springfield	53	2.14	18.25	208	245	50

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
North Central	189+	59	69	40+	7	10	12
East North Central	187	56	65	38	7	9	11
Ohio	202+	54	61	31	7	13	9
Akron	184	48	48	16	0	16	16
Canton	198	60	60	17	0	34+	9
Cincinnati	174	35-	38-	19-	3	13	3
Cleveland	209	61	69	48	8	8	5
Columbus	228	32-	32-	18	5	9	0
Dayton	173	33	47	33	0	13	0
Hamilton	34	0	0	0	0	0	0
Lima	293	24	24	24	0	0	0
Lorain-Elyria	222	56	56	28	0	0	28
Mansfield	242	91	121	61	30	30	0
Steubenville	258	97	129	65	0	0	65
Toledo	181	71	102	55	8	24	16
Youngstown	202	73	83	37	18	18	9
Indiana	191	47	55	33	5	7	11
Anderson	143	48	48	0	0	48	0
Bloomington	63	0	0	0	0	0	0
Elkhart-Goshen	94	0	0	0	0	0	0
Evansville	162	59	74	44	0	0	29
Fort Wayne	134	75	149+	134++	15	0	0
Gary-Hammond	221	70	81	47	12	0	23
Indianapolis	181	40	45	17	6	0	23
Kokomo	357	71	71	0	0	71	0
Lafayette	143	0	0	0	0	0	0
Muncie	250	36	36	36	0	0	0
South Bend	200	57	57	43	0	14	0
Terre Haute	229	0	0	0	0	0	0
Illinois	181	60	71	46+	7	8	12
Aurora-Elgin	117	33	33	33	0	0	0
Bloomington	192	38	38	0	0	38	0
Champaign	231	77	77	77	0	0	0
Chicago	184	54	66	42	8	7	10
Decatur	219	94	94	63	0	0	31
Joliet	277	85	128	106	0	21	0
Kankakee	185	74	74	74	0	0	0
Lake County	127	38	38	25	0	13	0
Peoria	114-	11	11-	0	0	0	11
Rockford	111	111	111	74	0	0	37
Springfield	200	100	100	60	20	0	20

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Michigan	1,613	1.64--	14.25	160	210	1,540
Ann Arbor	21	1.18-	15.81	190	286	20
Battle Creek	31	1.84	14.81	194	161	29
Benton Harbor	46	2.13	12.96	239	239	44
Detroit	715	1.59--	15.38	152	232	680
Flint	66	1.53	15.36	167	182	64
Grand Rapids	104	1.62	11.87	87--	183	102
Jackson	36	2.11	13.39	194	222	33
Kalamazoo	44	2.05	13.41	205	273	41
Lansing	46	1.42	13.76	130	217	45
Muskegon	31	1.64	10.84	161	226	28
Saginaw	61	1.45	16.08	230	279	54
Wisconsin	1,205	1.97++	13.38	186	207	1,159
Appleton	69	2.00	12.49	232	159	68
Eau Claire	34	2.01	14.18	235	147	34
Green Bay	33	1.72	12.03	121	121	32
Janesville	31	1.88	11.84	65	258	31
Kenosha	25	1.75	11.96	120	240	23
LaCrosse	25	2.11	12.16	280	120	25
Madison	66	2.14	13.00	227	106--	65
Milwaukee	326	1.95	14.96	202	206	313
Racine	42	2.05	13.21	95	262	39
Sheboygan	27	1.87	13.26	74	185	26
Wausau	22	1.70	12.82	91	273	19
West North Central	4,066	1.89++	13.65	190+	221	3,877
Minnesota	710	1.79	12.00	238++	208	675
Duluth	49	1.63	12.61	286	224	48
Minneapolis	246	1.74	12.11	264++	256	232
Rochester	24	2.56	15.63	333	208	23
St. Cloud	28	2.29	12.04	429+	143	26
Iowa	877	2.17++	13.09	197	204	848
Cedar Rapids	50	2.59+	16.26	180	220	48
Davenport	94	2.11	14.94	170	202	87
Des Moines	79	1.97	15.05	152	215	79
Dubuque	23	2.01	13.74	217	261	23
Iowa City	14	2.24	9.50	71	143	14
Sioux City	37	2.32	12.11	189	162	36
Waterloo	45	2.31	11.00	156	222	45

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Michigan	190	54	64	38	5	10	10
Ann Arbor	200	150	150	0	100+	0	50
Battle Creek	138	69	103	69	0	0	34
Benton Harbor	250	91	136	114+	23	0	0
Detroit	171	47	54	37	1	9	7
Flint	203	78	94	47	0	31	16
Grand Rapids	176	49	69	39	20	0	10
Jackson	152	0	0	0	0	0	0
Kalamazoo	195	73	73	49	0	0	24
Lansing	333+	67	67	22	0	22	22
Muskegon	250	71	143	0	36	36	71
Saginaw	204	56	56	19	0	19	19
Wisconsin	161	64	73	39	13	9	13
Appleton	132	88	103	44	44+	0	15
Eau Claire	206	29	29	0	0	0	29
Green Bay	156	63	63	31	0	31	0
Janesville	194	97	97	97	0	0	0
Kenosha	217	0	0	0	0	0	0
LaCrosse	80	0	0	0	0	0	0
Madison	169	123	123	46	31	0	46
Milwaukee	131--	48	58	32	13	10	3
Racine	205	77	77	0	0	26	51
Sheboygan	192	77	77	38	0	0	38
Wausau	211	0	0	0	0	0	0
West North Central	194+	66+	77++	44+	8	11	13
Minnesota	190	71	79	30	13	18+	18
Duluth	125	0	0	0	0	0	0
Minneapolis	203	91	99	34	17	26+	22
Rochester	261	43	43	0	0	0	43
St. Cloud	269	115	115	77	0	0	38
Iowa	166	58	68	44	5	9	11
Cedar Rapids	125	104	146	83	0	0	63+
Davenport	138	46	46	23	11	11	0
Des Moines	177	76	76	63	0	0	13
Dubuque	261	87	87	43	43	0	0
Iowa City	71	0	0	0	0	0	0
Sioux City	111	28	28	0	0	28	0
Waterloo	156	89	89	67	0	22	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Missouri	1,212	1.85	15.11	177	224	1,154
Columbia	16	1.87	11.44	188	125	15
Joplin	37	1.92	18.68	162	162	36
Kansas City	259	1.67	15.15	174	239	246
St. Joseph	30	2.20	14.17	200	167	28
St. Louis	579	2.04++	16.09	168	230	547
Springfield	46	1.66	13.04	239	174	46
North Dakota	155	1.81	13.92	200	206	146
Bismarck	12	1.47	19.67	417	417	9
Fargo	30	2.12	12.17	167	233	28
Grand Forks	9	1.58	14.11	0	222	9
South Dakota	180	1.87	13.96	161	250	169
Rapid City	17	2.38	14.71	0	294	16
Sioux Falls	32	2.41	12.69	125	281	31
Nebraska	417	1.99+	13.53	177	221	400
Lincoln	32	1.52	11.72	125	156	32
Omaha	117	2.03	14.54	205	222	110
Kansas	515	1.67	13.34	159	250	485
Lawrence	10	2.01	13.30	100	100	10
Topeka	46	2.42	11.83	87	217	46
Wichita	48	1.05--	13.44	188	229	47
South	14,769	1.65--	14.71	161--	209	14,109
South Atlantic	8,150	1.75	14.61	155--	204-	7,801
Delaware	161	2.29++	14.20	118-	224	150
Wilmington	124	2.13	13.69	113-	210	118
Maryland	838	1.92+	15.16	211+	226	793
Baltimore	513	2.09++	15.94	246++	236	480
Cumberland	36	2.11	14.08	139	194	35
Hagerstown	21	1.45	11.90	143	143	21
Dist. of Columbia	122	1.84	15.52	139	238	116
Washington	446	1.72	14.58	132--	202	429
Virginia	911	1.62--	15.42	137--	191	879
Charlottesville	14	1.16	13.64	214	214	14
Danville	17	1.09-	18.71	235	118	17
Lynchburg	32	1.77	15.63	156	188	30
Norfolk	179	1.73	16.41	134	207	174
Richmond	148	1.73	16.30	142	223	138
Roanoke	55	1.80	15.98	109	164	52

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Missouri	184	68	77	46	10	10	12
Columbia	200	0	0	0	0	0	0
Joplin	139	56	56	56	0	0	0
Kansas City	232	85	110	69+	16	8	16
St. Joseph	143	71	71	0	71+	0	0
St. Louis	176	68	77	44	9	9	15
Springfield	109	43	43	0	22	22	0
North Dakota	219	75	89	68	7	0	14
Bismarck	222	0	0	0	0	0	0
Fargo	71	0	0	0	0	0	0
Grand Forks	222	0	0	0	0	0	0
South Dakota	284++	47	59	36	0	6	18
Rapid City	188	0	0	0	0	0	0
Sioux Falls	226	97	97	32	0	0	65
Nebraska	210	65	75	45	5	13	13
Lincoln	188	31	31	31	0	0	0
Omaha	255	64	64	36	9	9	9
Kansas	225+	70	91	58	8	12	12
Lawrence	0	0	0	0	0	0	0
Topeka	174	87	109	65	22	22	0
Wichita	340+	21	21	21	0	0	0
South	185	55	62	32-	8	10	12
South Atlantic	168--	57	63	33	8	9	12
Delaware	173	60	67	47	0	7	13
Wilmington	186	85	93	59	0	17	17
Maryland	166	67	83	48	14	10	11
Baltimore	158	71	88	48	17	10	13
Cumberland	171	29	29	29	0	0	0
Hagerstown	95	0	0	0	0	0	0
Dist. of Columbia	138	34	34	17	0	9	9
Washington	156	54	65	47	2	7	9
Virginia	172	48	52	28	7	7	10
Charlottesville	143	71	71	71	0	0	0
Danville	59	0	0	0	0	0	0
Lynchburg	267	100	133	67	0	33	33
Norfolk	121-	52	57	34	6	6	11
Richmond	261+	65	72	29	7	7	29
Roanoke	115	19	19	0	19	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay				Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures		
West Virginia	405	1.66	14.88	131--	212	392
Charleston	62	1.81	15.95	113	177	60
Huntington	60	1.47	15.57	150	283	56
Parkersburg	40	2.01	13.83	100	175	39
Wheeling	37	1.68	19.30	216	135	36
North Carolina	1,023	1.48--	14.50	186	200	985
Asheville	40	1.63	13.23	50	200	39
Burlington	23	1.59	14.00	87	174	23
Charlotte	184	1.68	13.58	201	212	178
Fayetteville	19	1.42	14.16	158	211	18
Greensboro	149	1.50-	13.79	195	114--	145
Hickory	30	1.28-	14.57	133	167	28
Jacksonville	8	1.17	11.50	500	167	5
Raleigh-Durham	83	1.47	26.59	289+	265	79
Wilmington	21	1.66	15.00	143	238	21
South Carolina	525	1.60-	15.59	154	181-	503
Anderson	28	1.69	15.11	107	179	27
Charleston	60	1.75	17.63	167	133	57
Columbia	46	1.30-	15.80	130	217	43
Florence	19	1.70	15.00	211	105	19
Greenville	106	1.61	15.58	151	170	103
Georgia	753	1.34--	14.70	146-	208	717
Albany	12	1.29	12.08	83	250	12
Athens	14	1.04--	13.50	286	214	13
Atlanta	272	1.44--	15.31	158	184	262
Augusta	50	1.52	16.02	160	200	48
Columbus	16	0.70--	11.00	125	188	14
Macon	43	1.66	14.02	93	140	42
Savannah	37	1.46	18.32	135	162	36

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
West Virginia	168	56	61	36	3	10	13
Charleston	83--	50	50	33	0	0	17
Huntington	250	125	143	54	18	54+	18
Parkersburg	205	77	77	51	26	0	0
Wheeling	111	28	28	28	0	0	0
North Carolina	152-	54	59	28	10	10	10
Asheville	205	77	77	0	51	0	26
Burlington	130	43	87	0	0	87+	0
Charlotte	157	67	67	45	11	6	6
Fayetteville	111	56	56	0	0	0	56
Greensboro	166	55	55	28	7	0	21
Hickory	214	36	36	0	0	0	36
Jacksonville	0	0	0	0	0	0	0
Raleigh-Durham	114	13	13	13	0	0	0
Wilmington	143	143	143	95	0	48	0
South Carolina	189	52	52	12--	10	16	14
Anderson	148	74	74	0	37	37	0
Charleston	140	35	35	18	18	0	0
Columbia	186	47	47	23	0	0	23
Florence	211	105	105	0	53	0	53
Greenville	204	39	39	10	10	19	0
Georgia	187	46	47	25	3	4	14
Albany	83	83	83	0	0	0	83
Athens	231	0	0	0	0	0	0
Atlanta	195	50	50	31	4	0	11
Augusta	83	21	21	21	0	0	0
Columbus	286	0	0	0	0	0	0
Macon	143	71	71	48	0	0	24
Savannah	111	28	28	28	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Florida	3,412	2.00++	14.07	145--	203	3,266
Bradenton	82	1.91	13.46	122	256	78
Daytona Beach	121	1.93	13.27	157	231	114
Fort Lauderdale	411	2.26++	14.26	151	197	396
Fort Myers	150	2.44++	15.11	120-	193	141
Fort Pierce	73	1.77	13.53	110	164	71
Ft. Walton Beach	11	1.08-	14.82	273	273	10
Gainesville	26	1.55	13.00	192	231	25
Jacksonville	146	1.80	13.96	219	233	139
Lakeland	81	1.46	13.17	123	210	79
Melbourne	108	2.32+	13.04	93--	213	100
Miami-Hialeah	338	2.01+	15.28	133-	222	323
Naples	50	2.13	13.76	120	180	47
Ocala	58	1.85	13.22	69--	190	56
Orlando	161	1.78	13.71	106--	236	155
Panama City	19	1.61	12.37	53	158	19
Pensacola	47	1.57	14.47	191	149	44
Sarasota	182	2.34++	13.10	154	198	178
Tallahassee	23	1.32	12.39	130	217	21
Tampa	678	2.09++	15.08	183	199	652
West Palm Beach	313	2.24++	13.97	128--	173-	298
East South Central	2,640	1.53--	15.71	165	213	2,510
Kentucky	674	1.59--	15.91	162	200	643
Lexington	45	1.45	14.13	133	244	43
Louisville	212	1.97	16.53	193	222	201
Owensboro	23	2.23	13.22	87	174	23
Tennessee	914	1.66-	15.94	160	224	865
Chattanooga	82	1.64	18.28	232	232	75
Clarksville	26	2.07	12.50	77	269	24
Jackson	29	2.88+	15.07	241	379	27
Johnson City	77	1.40-	14.90	91--	260	73
Knoxville	116	1.63	15.35	95--	155	111
Memphis	177	1.99	18.75	158	271	168
Nashville	160	1.72	15.89	163	225	151
Alabama	645	1.39--	15.42	175	209	611
Anniston	17	1.30	19.29	235	118	17
Birmingham	158	1.46--	15.37	171	203	150
Dothan	20	1.58	14.55	150	100	19
Florence	18	1.08--	13.56	111	167	17
Gadsden	20	1.40	15.75	250	250	18
Huntsville	24	1.40	16.13	208	167	23
Mobile	83	1.64	17.12	217	265	78
Montgomery	47	1.58	15.55	149	255	43
Tuscaloosa	25	1.84	18.24	120	240	24

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges				
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Florida	166-	61	69	37	9	9	13
Bradenton	77--	51	90	90+	0	0	0
Daytona Beach	149	61	70	26	0	18	18
Fort Lauderdale	177	63	63	23	15	8	18
Fort Myers	113-	78	106	92++	0	7	7
Fort Pierce	127	56	70	28	14	14	14
Ft. Walton Beach	100	0	0	0	0	0	0
Gainesville	160	40	40	0	0	40	0
Jacksonville	194	58	58	22	7	14	14
Lakeland	215	51	51	25	13	13	0
Melbourne	200	70	70	20	10	20	20
Miami-Hialeah	192	84	102	65	6	12	19
Naples	128	0	0	0	0	0	0
Ocala	161	71	125	107+	0	18	0
Orlando	135	39	39	26	6	6	0
Panama City	158	53	53	0	0	53	0
Pensacola	205	68	68	45	0	23	0
Sarasota	135	73	73	22	22	6	22
Tallahassee	429+	143	143	48	0	48	48
Tampa	147-	48	49	21-	9	6	12
West Palm Beach	181	47	57	34	7	7	10
East South Central	215++	53	59	30	4-	11	14
Kentucky	205	53	59	28	3	12	16
Lexington	256	47	47	0	0	23	23
Louisville	204	60	60	20	5	5	30
Owensboro	87	43	43	43	0	0	0
Tennessee	206	50	59	34	5	7	14
Chattanooga	267	93	93	27	13	13	40
Clarksville	250	42	42	42	0	0	0
Jackson	296	74	148	111	0	0	37
Johnson City	151	82	96	55	0	0	41
Knoxville	153	27	27	27	0	0	0
Memphis	190	42	48	24	12	12	0
Nashville	199	20	26	20	0	7	0
Alabama	213	52	54	29	3	15	7
Anniston	235	118	118	0	0	0	118+
Birmingham	273+	47	47	20	0	20	7
Dothan	158	105	105	105	0	0	0
Florence	176	118	118	118	0	0	0
Gadsden	111	0	0	0	0	0	0
Huntsville	130	43	43	0	0	43	0
Mobile	218	64	64	51	0	0	13
Montgomery	209	47	47	47	0	0	0
Tuscaloosa	292	83	125	83	0	42	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Mississippi	407	1.40--	15.30	165	214	391
Biloxi-Gulfport	22	1.22-	20.64	409+	227	22
Jackson	50	1.42	15.96	100	180	48
Pascagoula	12	1.40	14.25	83	167	12
West South Central	3,979	1.54--	14.26	169	218	3,798
Arkansas	512	1.59--	15.00	176	203	496
Fayetteville	29	2.46	19.21	207	276	27
Fort Smith	37	1.73	12.97	54	108	36
Little Rock	74	1.45	18.54	324++	270	69
Pine Bluff	16	1.45	19.44	250	375	16
Louisiana	632	1.52--	15.51	182	220	600
Alexandria	25	1.81	15.68	160	240	24
Baton Rouge	85	2.15	12.79	165	153	83
Houma-Thibodaux	17	1.26	16.47	176	235	16
Lafayette	10	0.68--	14.50	100	300	10
Lake Charles	20	1.22-	17.55	350	300	17
Monroe	9	0.61--	14.00	111	444	8
New Orleans	197	1.66	17.54	193	223	190
Shreveport	56	1.52	14.93	143	321	51
Oklahoma	624	1.65	14.05	165	236	591
Enid	9	1.10	11.56	0	222	9
Lawton	11	1.34	15.55	364	91	11
Oklahoma City	151	1.70	14.62	179	252	145
Tulsa	121	1.70	13.39	174	190	114

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges				
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Mississippi	253++	59	66	28	8	10	20
Biloxi-Gulfport	182	91	91	45	0	0	45
Jackson	146	42	42	21	21	0	0
Pascagoula	0	0	0	0	0	0	0
West South Central	200++	55	61	31	8	11	12
Arkansas	210	36-	38--	10--	14	2	12
Fayetteville	222	37	74	0	74+	0	0
Fort Smith	167	56	56	28	0	0	28
Little Rock	290+	58	58	0	14	0	43
Pine Bluff	188	0	0	0	0	0	0
Louisiana	215+	53	63	28	8	15	12
Alexandria	125	0	0	0	0	0	0
Baton Rouge	217	12	24	0	0	0	24
Houma-Thibodaux	188	63	63	0	0	63	0
Lafayette	500	100	100	0	100	0	0
Lake Charles	235	59	59	59	0	0	0
Monroe	0	125	125	125	0	0	0
New Orleans	205	68	79	37	11	21	11
Shreveport	255	20	20	20	0	0	0
Oklahoma	220+	73	80	47	5	17	10
Enid	111	111	111	0	0	0	111
Lawton	273	91	91	91	0	0	0
Oklahoma City	221	55	55	41	0	14	0
Tulsa	158	61	79	53	18	0	9

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Texas	2,211	1.51--	13.80	166	216	2,111
Abilene	12	0.92--	13.17	83	83	12
Amarillo	23	1.21-	13.30	87	304	21
Austin	73	1.53	12.16	110	178	71
Beaumont	72	1.70	15.71	111	264	71
Brazoria	25	2.00	14.76	160	160	25
Brownsville	27	1.34	13.56	111	370	26
Bryan	13	1.87	13.85	0	77	12
Corpus Christi	28	0.99--	15.36	107	214	27
Dallas	262	1.52--	12.98	183	160-	255
El Paso	33	0.88--	14.39	182	303	31
Fort Worth	156	1.59	14.04	231	212	152
Galveston	24	1.24-	14.21	42	167	24
Houston	324	1.72	16.21	191	216	301
Killeen-Temple	34	1.98	11.12	324	118	34
Laredo	4	0.48--	17.25	250	0	4
Longview	26	1.27-	15.15	231	231	25
Lubbock	17	0.90--	17.29	353	235	16
McAllen	31	1.13--	11.87	161	323	27
Midland	5	0.68--	11.80	200	600	4
Odessa	10	1.09-	15.30	100	600+	9
San Angelo	22	1.96	13.91	91	227	20
San Antonio	148	1.37--	14.45	162	230	142
Sherman-Denison	26	1.79	14.73	192	231	24
Texarkana	26	1.70	13.35	269	115	26
Tyler	37	2.03	11.92	135	243	35
Victoria	8	1.16	10.13	0	250	7
Waco	35	1.48	11.43	143	114	35
Wichita Falls	24	1.66	13.54	167	292	24
West	7,533	1.66--	12.16	176	208	7,269
Mountain	1,838	1.53--	12.31	191	213	1,765
Montana	177	1.82	12.08	164	175	173
Billings	16	1.32	12.81	188	250	15
Great Falls	22	2.42	13.86	227	273	22
Idaho	177	1.61	12.83	237	226	168
Boise City	39	2.11	12.51	154	231	39
Wyoming	45	1.06--	13.04	200	133	45
Casper	6	1.12	12.67	333	0	6
Cheyenne	7	1.02-	11.14	0	143	7

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges				
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Texas	189	55	61	33	7	9	12
Abilene	0	0	0	0	0	0	0
Amarillo	95	0	0	0	0	0	0
Austin	169	141+	169++	127++	0	14	28
Beaumont	211	28	28	0	0	28	0
Brazoria	80	40	40	40	0	0	0
Brownsville	192	38	38	38	0	0	0
Bryan	83	0	0	0	0	0	0
Corpus Christi	111	0	0	0	0	0	0
Dallas	169	67	71	20	4	16	31+
El Paso	258	65	65	32	32	0	0
Fort Worth	204	86	92	59	7	20	7
Galveston	167	42	42	0	42	0	0
Houston	213	50	53	23	3	13	13
Killeen-Temple	206	59	59	29	0	0	29
Laredo	250	500+	500	250	0	250	0
Longview	120	0	0	0	0	0	0
Lubbock	438	0	0	0	0	0	0
McAllen	222	37	74	74	0	0	0
Midland	500	0	0	0	0	0	0
Odessa	333	0	0	0	0	0	0
San Angelo	300	100	150	100	50	0	0
San Antonio	275+	63	63	42	7	0	14
Sherman-Denison	125	42	42	42	0	0	0
Texarkana	154	38	38	0	0	38	0
Tyler	143	29	29	29	0	0	0
Victoria	143	0	0	0	0	0	0
Waco	171	57	57	0	0	0	57
Wichita Falls	292	83	83	42	42	0	0
West	171-	63+	70	40	11+	8	10
Mountain	183	71+	82+	49+	13	11	9
Montana	208	52	58	23	12	17	6
Billings	333	0	0	0	0	0	0
Great Falls	227	45	45	45	0	0	0
Idaho	185	77	95	36	30+	12	18
Boise City	154	51	77	26	51	0	0
Wyoming	133	0	0	0	0	0	0
Casper	0	0	0	0	0	0	0
Cheyenne	0	0	0	0	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number of per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Colorado	450	1.69	12.52	167	220	428
Boulder-Longmont	24	1.58	12.33	167	333	22
Colorado Springs	41	1.65	12.34	122	244	40
Denver	211	1.76	13.47	180	185	205
Fort Collins	29	1.92	10.69	241	345	27
Greeley	15	1.29	11.33	200	133	14
Pueblo	35	2.28	12.17	171	171	33
New Mexico	140	1.12--	12.08	186	207	136
Albuquerque	42	1.24--	12.95	286	119	40
Las Cruces	14	1.49	12.93	71	214	14
Santa Fe	9	1.06-	14.11	333	222	9
Arizona	568	1.63-	12.48	194	210	549
Phoenix	342	1.83	13.05	196	211	326
Tucson	105	1.49-	11.78	162	238	103
Utah	159	1.24--	11.04	220	226	151
Provo-Orem	19	1.18-	10.47	316	263	19
Salt Lake City	104	1.35--	11.27	221	202	97
Nevada	122	1.49-	11.95	205	254	115
Las Vegas	54	1.19--	12.13	148	296	53
Reno	38	1.99	10.08	158	132	37
Pacific	5,695	1.71--	12.11	171	206	5,504
Washington	807	1.75	10.91	191	219	782
Bellingham	33	2.42	9.55	242	212	33
Bremerton	27	1.75	13.96	74	296	27
Olympia	27	1.89	12.67	148	407	26
Richland	20	1.59	9.55	150	300	19
Seattle	286	1.79	11.63	231+	210	277
Spokane	69	1.67	9.09	159	246	67
Tacoma	79	1.57	10.25	253	266	74
Vancouver	22	1.29	10.45	136	182	22
Yakima	45	1.98	10.58	67	178	44
Oregon	428	1.41--	11.31	203	171-	416
Eugene	40	1.38	12.35	275	150	40
Medford	28	1.38	9.57	71	71	28
Portland	144	1.45--	12.65	236	243	138
Salem	49	1.47	10.37	122	82--	48

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Colorado	159	86+	100+	65+	14	7	14
Boulder-Longmont	364	182	182	91	45	0	45
Colorado Springs	125	75	75	75	0	0	0
Denver	166	63	83	59	10	10	5
Fort Collins	111	74	111	37	74+	0	0
Greeley	214	143	143	71	0	71	0
Pueblo	121	30	30	30	0	0	0
New Mexico	184	59	59	37	0	7	15
Albuquerque	200	75	75	75	0	0	0
Las Cruces	357	0	0	0	0	0	0
Santa Fe	222	111	111	111	0	0	0
Arizona	209	75	89	56	15	11	7
Phoenix	209	74	92	55	18	9	9
Tucson	243	97	107	68	10	19	10
Utah	159	86	93	60	7	26	0
Provo-Orem	105	53	53	53	0	0	0
Salt Lake City	155	72	72	41	10	21	0
Nevada	157	35	43	35	9	0	0
Las Vegas	151	38	38	19	19	0	0
Reno	162	27	27	27	0	0	0
Pacific	168--	61	66	38	10	8	10
Washington	169	51	55	35	9	6	5
Bellingham	121	30	30	30	0	0	0
Bremerton	185	74	74	74	0	0	0
Olympia	77	0	0	0	0	0	0
Richland	105	105	105	105	0	0	0
Seattle	181	65	76	51	7	7	11
Spokane	164	45	45	15	30	0	0
Tacoma	135	41	41	14	14	14	0
Vancouver	45	45	45	45	0	0	0
Yakima	205	23	23	0	0	0	23
Oregon	127--	38	38-	22	5	2	10
Eugene	150	25	25	0	0	0	25
Medford	179	36	36	36	0	0	0
Portland	123-	58	58	36	7	7	7
Salem	63	0	0	0	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
California	4,299	1.74	12.33	164-	209	4,148
Anaheim-Santa Ana	275	1.65	12.25	171	189	268
Bakersfield	90	2.00	12.50	233	244	87
Chico	59	2.18	11.14	136	237	56
Fresno	76	1.30--	10.83	158	250	72
Los Angeles	1,198	1.77	13.44	169	222	1,154
Merced	27	2.01	11.63	148	148	26
Modesto	68	2.02	11.24	176	191	62
Oakland	317	1.68	12.18	170	211	309
Oxnard-Ventura	85	1.72	12.55	141	188	82
Redding	40	2.25	10.00	150	150	39
Riverside	353	1.74	12.90	187	207	333
Sacramento	191	1.59	10.94	126-	188	188
Salinas	36	1.24--	10.08	83	83	36
San Diego	320	1.56-	11.80	138-	213	310
San Francisco	317	1.94	12.77	170	189	308
San Jose	199	1.89	11.36	171	196	194
Santa Barbara	73	1.92	12.62	110	274	69
Santa Cruz	37	1.50	10.73	108	108	37
Santa Rosa	67	1.50	10.64	164	209	65
Stockton	87	2.13	11.43	126	230	83
Vallejo	53	1.48	11.74	132	245	51
Visalia	39	1.35	12.36	103	256	38
Yuba City	19	1.61	11.53	0	105	18
Alaska	32	1.96	18.75	281	94	32
Anchorage	13	2.31	21.31	231	154	13
Hawaii	129	1.61	13.44	147	186	126
Honolulu	101	1.75	13.97	139	188	98

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4a. Partial excision of the large intestine with cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Intestinal obstruction	Other intestinal complications	Infectious complications related to surgery	General surgical complications
California	169-	64+	69	39	10	9	12
Anaheim-Santa Ana	213	67	78	34	19	22	4
Bakersfield	195	57	69	11	11	23	23
Chico	196	71	89	71	0	18	0
Fresno	181	111	111	69	14	14	14
Los Angeles	183	63	68	46	6	10	7
Merced	154	0	0	0	0	0	0
Modesto	161	81	97	32	65++	0	0
Oakland	165	45	52	36	13	3	0
Oxnard-Ventura	232	85	85	24	12	12	37
Redding	128	128	128	77	26	0	26
Riverside	159	60	63	33	12	6	12
Sacramento	138	64	74	53	11	0	11
Salinas	194	28	28	0	28	0	0
San Diego	148	61	68	35	3	6	23
San Francisco	162	78	81	42	3	13	23
San Jose	108--	57	62	36	10	10	5
Santa Barbara	145	87	87	43	14	0	29
Santa Cruz	297	54	54	54	0	0	0
Santa Rosa	231	77	77	15	31	15	15
Stockton	133	12	12	0	0	0	12
Vallejo	98	20	20	20	0	0	0
Visalia	184	105	105	79	0	0	26
Yuba City	0	0	0	0	0	0	0
Alaska	156	31	31	0	0	0	31
Anchorage	154	0	0	0	0	0	0
Hawaii	246	95	119+	79+	40++	0	0
Honolulu	245	82	102	51	51++	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1b. Partial excision of the large intestine without cancer: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986 index stays (Number of procedures: 27,856. Number of live discharges: 25,510. Partial excision of the large intestine without cancer must include ICD-9-CM principal procedure code 45.7. Stays are excluded if procedure code 46.1 is listed. Stays are also excluded if 153 or 154 is the principal diagnosis.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmis- sions within(1)		
Total	--	--	--	307.12	78.64
1. Intestinal obstruction(2)	--	--	--	--	38.69
Volvulus	560.2	No	1 year	--	1.49
Other specified intestinal obstruction	560.8	No	1 year	--	16.54
Unspecified intestinal obstruction	560.9	No	1 year	--	20.66
2. Other intestinal complications(2)	--	--	--	38.73	11.52
Fistula of intestine, excluding rectum and anus	569.81	No	90 days	--	1.06
Ulceration of intestine	569.82	No	90 days	--	0.24
Perforation of intestine	569.83	No	90 days	--	0.67
Persistent postoperative fistula	998.6	Yes	90 days	3.41	1.49
Digestive-genital tract fistula, female	619.1	No	90 days	--	0.74
Intestinovesical fistula	596.1	No	90 days	--	0.20
Gastrointestinal complications	997.4	Yes	1 year	26.24	7.10
Hernia of other specified sites	553.8	No	1 year	--	0.04
Paralytic ileus	560.1	Yes	No	9.08	--

(1) Measured from date of surgery to date of readmission.

(2) For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3) Included only if procedure code 54.61 is not present.

(4) If code 410 is principal diagnosis, code 997.1 is not necessary.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1b. Partial excision of the large intestine without cancer: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986 index stays (Number of procedures: 27,856. Number of live discharges: 25,510. Partial excision of the large intestine without cancer must include ICD-9-CM principal procedure code 45.7. Stays are excluded if procedure code 46.1 is listed. Stays are also excluded if 153 or 154 is the principal diagnosis.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmissions within(1)		
3. Infectious complications related to surgery(2)	--	--	--	179.78	11.37
Other bacterial pneumonia	482	Yes	15 days	7.32	0.20
Bronchopneumonia, organism unspecified	485	Yes	15 days	1.22	0.00
Pneumonia, organism unspecified	486	Yes	15 days	17.02	0.31
Respiratory complications	997.3	Yes	15 days	23.48	0.12
Postoperative infection	998.5	Yes	30 days	35.07	5.53
Other suppurative peritonitis	567.2	No	30 days	--	1.06
Other cellulitis and abscess, upper arm and forearm	682.3	No	30 days	--	0.00
Other cellulitis and abscess, hand, except fingers and thumb	682.4	No	30 days	--	0.04
Unspecified peritonitis	567.9	No	30 days	--	0.12
Other infection	999.3	Yes	30 days	0.50	0.00
Acute cystitis	595.0	Yes	30 days	0.93	0.04
Cystitis, unspecified	595.9	Yes	30 days	1.58	0.04
Urinary tract infection, site not specified	599.0	Yes	30 days	57.12	2.00
Acute pyelonephritis	590.1	Yes	30 days	0.47	0.16
Other pyelonephritis or pyonephrosis, not specified as acute or chronic	590.8	Yes	30 days	0.75	0.12
Infection of kidney, unspecified	590.9	Yes	30 days	0.14	0.04
Septicemia	038	Yes	30 days	25.45	1.10
Other specified peritonitis	567.8	No	30 days	--	0.04
Other cellulitis and abscess, unspecified site	682.9	No	30 days	--	0.00
Other cellulitis and abscess, trunk	682.2	No	30 days	--	0.04
Disruption of operation wound	998.3	Yes	30 days	8.72	0.43

(1) Measured from date of surgery to date of readmission.

(2) For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3) Included only if procedure code 54.61 is not present.

(4) If code 410 is principal diagnosis, code 997.1 is not necessary.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1b. Partial excision of the large intestine without cancer: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986 index stays (Number of procedures: 27,856. Number of live discharges: 25,510. Partial excision of the large intestine without cancer must include ICD-9-CM principal procedure code 45.7. Stays are excluded if procedure code 46.1 is listed. Stays are also excluded if 153 or 154 is the principal diagnosis.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmissions within(1)		
4. General surgical complications(2)	--	--	--	88.20	16.90
Peripheral vascular complications	997.2	Yes	No	2.23	--
Acute reaction to foreign substance accidentally left during a procedure	998.7	Yes	30 days	0.14	0.04
Unspecified adverse effect of drug, medicinal and biological substance	995.2	Yes	15 days	1.22	0.00
Acute edema of lung, unspecified	518.4	Yes	15 days	2.08	0.00
Pulmonary insufficiency following trauma and surgery	518.5	Yes	15 days	5.64	0.00
Retention of urine	788.2	Yes	30 days	9.15	0.27
Incontinence of urine	788.3	Yes	30 days	1.08	0.04
Other vascular complications	999.2	Yes	30 days	1.58	0.00
Foreign body accidentally left during a procedure	998.4	Yes	30 days	0.47	0.04
Other specified complications of procedures, not elsewhere classified	998.8	Yes	30 days	9.76	0.27
Unspecified complication of procedure, not elsewhere classified	998.9	Yes	30 days	0.54	0.00
Postoperative shock	998.0	Yes	30 days	1.94	0.00
Accidental puncture or laceration during a procedure	998.2	Yes	30 days	12.89	0.04
Hemorrhage or hematoma complicating a procedure	998.1	Yes	15 days	14.75	0.47
Incisional ventral hernia with gangrene	551.21(3)	Yes(3)	1 year	0.29	0.00
Incisional ventral hernia with obstruction	552.21(3)	Yes(3)	1 year	2.15	0.51
Incisional ventral hernia	553.21(3)	Yes(3)	1 year	7.47	10.43
Trigonitis	595.3	Yes	30 days	0.32	0.04
Pulmonary embolism and infarction	415.1	Yes	30 days	6.68	1.45
Phlebitis and thrombophlebitis	451	No	30 days	--	1.06
Other venous embolism and thrombosis	453	No	30 days	--	0.82
Reclosure of postoperative disruption of abdominal wall	54.61	Yes	1 year	5.96	0.98
Acute myocardial infarction	410 and 997.1	Yes	15 days(4)	1.87	0.43
5. Other events(2)	--	--	--	--	--
Abscess of liver	572.0	Yes	90 days	0.39	0.16

(1)Measured from date of surgery to date of readmission.

(2)For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3)Included only if procedure code 54.61 is not present.

(4)If code 410 is principal diagnosis, code 997.1 is not necessary.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986 index stays

Race, sex, and age	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
All persons (2)	27,856	1.04	16.68	247	185	25,510
65-74 years	14,626	0.90	15.21	225	128	13,812
75-84 years	10,417	1.30	17.70	260	218	9,389
85 years or over	2,813	1.12	20.47	315	367	2,309
Men	10,120	0.95	16.59	261	210	9,160
65-74 years	5,628	0.80	15.27	242	147	5,268
75-84 years	3,708	1.27	17.55	275	263	3,261
85 years or over	784	1.15	21.52	334	418	631
Women	17,736	1.11	16.72	239	171	16,350
65-74 years	8,998	0.99	15.18	214	116	8,544
75-84 years	6,709	1.31	17.79	252	192	6,128
85 years or over	2,029	1.11	20.07	308	347	1,678
White	25,148	1.07	16.41	244	183	23,068
65-74 years	13,141	0.92	14.95	220	124	12,445
75-84 years	9,468	1.33	17.46	258	216	8,536
85 years or over	2,539	1.14	20.12	311	366	2,087
Men	9,123	0.97	16.23	255	207	8,279
65-74 years	5,051	0.81	14.94	236	143	4,744
75-84 years	3,361	1.31	17.16	270	261	2,961
85 years or over	711	1.18	20.91	318	414	574
Women	16,025	1.13	16.52	237	169	14,789
65-74 years	8,090	1.01	14.95	211	112	7,701
75-84 years	6,107	1.34	17.62	251	191	5,575
85 years or over	1,828	1.12	19.81	309	347	1,513
Black	1,722	0.86	20.56	302	233	1,534
65-74 years	906	0.75	18.97	295	182	824
75-84 years	617	1.06	21.47	298	256	549
85 years or over	199	1.02	24.96	347	397	161
Men	635	0.80	21.29	353	282	547
65-74 years	373	0.72	19.34	330	217	332
75-84 years	206	0.96	22.72	359	340	171
85 years or over	56	0.96	29.00	482	500	44
Women	1,087	0.91	20.13	272	205	987
65-74 years	533	0.77	18.71	270	158	492
75-84 years	411	1.12	20.84	268	214	378
85 years or over	143	1.04	23.38	294	357	117

(1) Includes "other events" category.

(2) Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986 index stays

Race, sex, and age	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
All persons(2)	217	70	79	39	12	11	17
65-74 years	205	72	82	38	12	11	20
75-84 years	228	68	76	39	11	12	14
85 years or over	249	64	73	43	7	13	10
Men	227	71	79	38	10	14	17
65-74 years	214	73	82	38	12	13	20
75-84 years	239	67	75	36	9	15	14
85 years or over	268	68	74	44	3	13	14
Women	212	69	78	39	12	10	17
65-74 years	199	72	81	38	13	10	21
75-84 years	221	68	76	40	13	10	14
85 years or over	243	62	72	42	9	13	8
White	217	69	78	37	11	11	18
65-74 years	204	72	81	37	12	11	21
75-84 years	229	66	74	37	11	12	14
85 years or over	248	62	71	42	7	13	10
Men	224	70	78	37	9	13	18
65-74 years	211	72	82	38	11	12	21
75-84 years	238	67	74	36	8	16	14
85 years or over	265	66	70	42	3	9	16
Women	214	68	77	37	12	10	17
65-74 years	200	72	81	36	13	10	22
75-84 years	224	66	74	37	12	10	14
85 years or over	242	60	71	42	8	15	7
Black	224	85	95	58	15	10	10
65-74 years	218	80	87	55	16	7	10
75-84 years	224	95	109	67	15	15	9
85 years or over	255	75	81	43	12	12	12
Men	260	86	95	51	20	15	9
65-74 years	250	78	84	45	21	9	9
75-84 years	275	105	117	64	23	18	12
85 years or over	273	68	91	45	0	45	0
Women	205	84	94	62	12	8	10
65-74 years	197	81	89	61	12	6	10
75-84 years	201	90	106	69	11	13	8
85 years or over	248	77	77	43	17	0	17

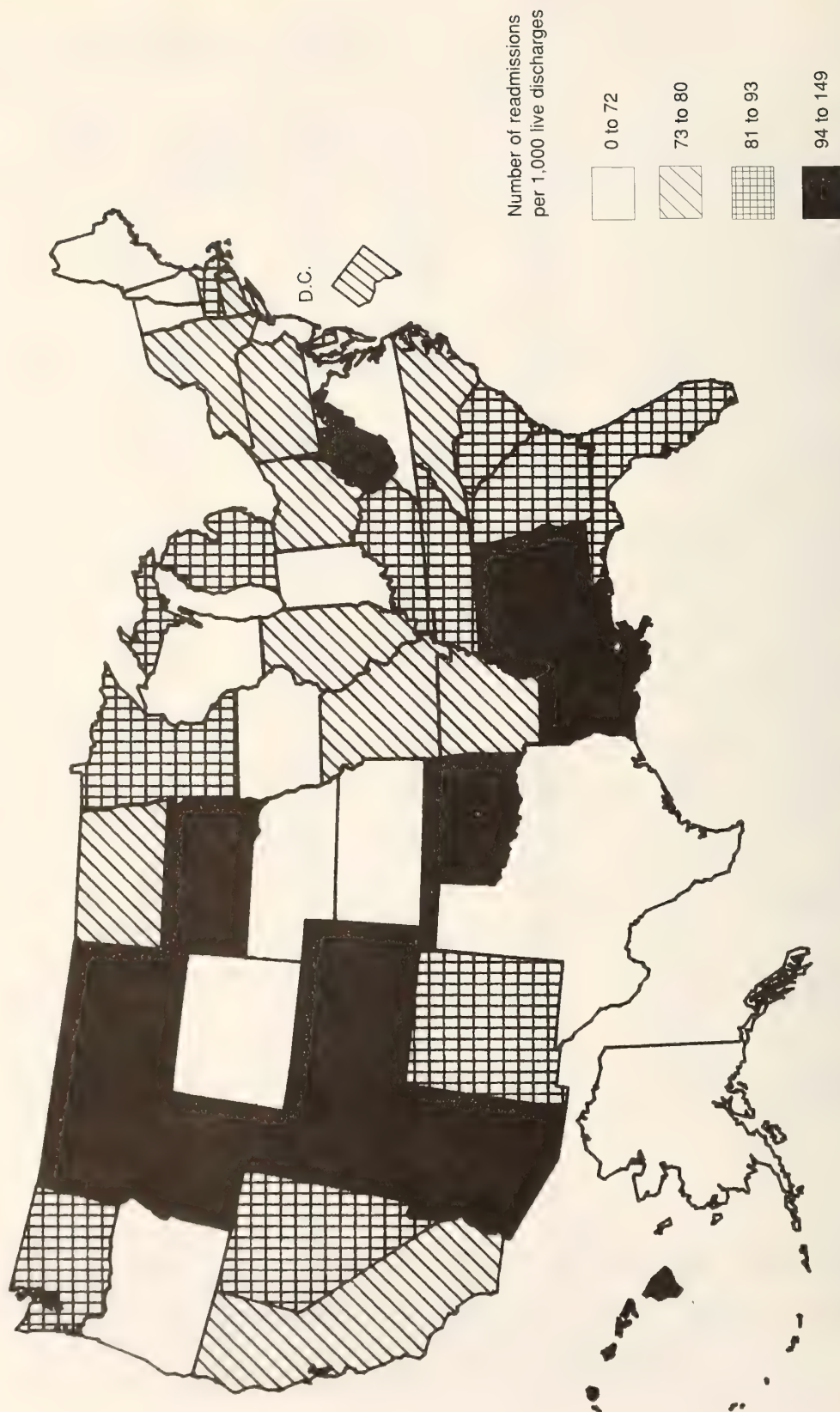
(1)Includes "other events" category.

(2)Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

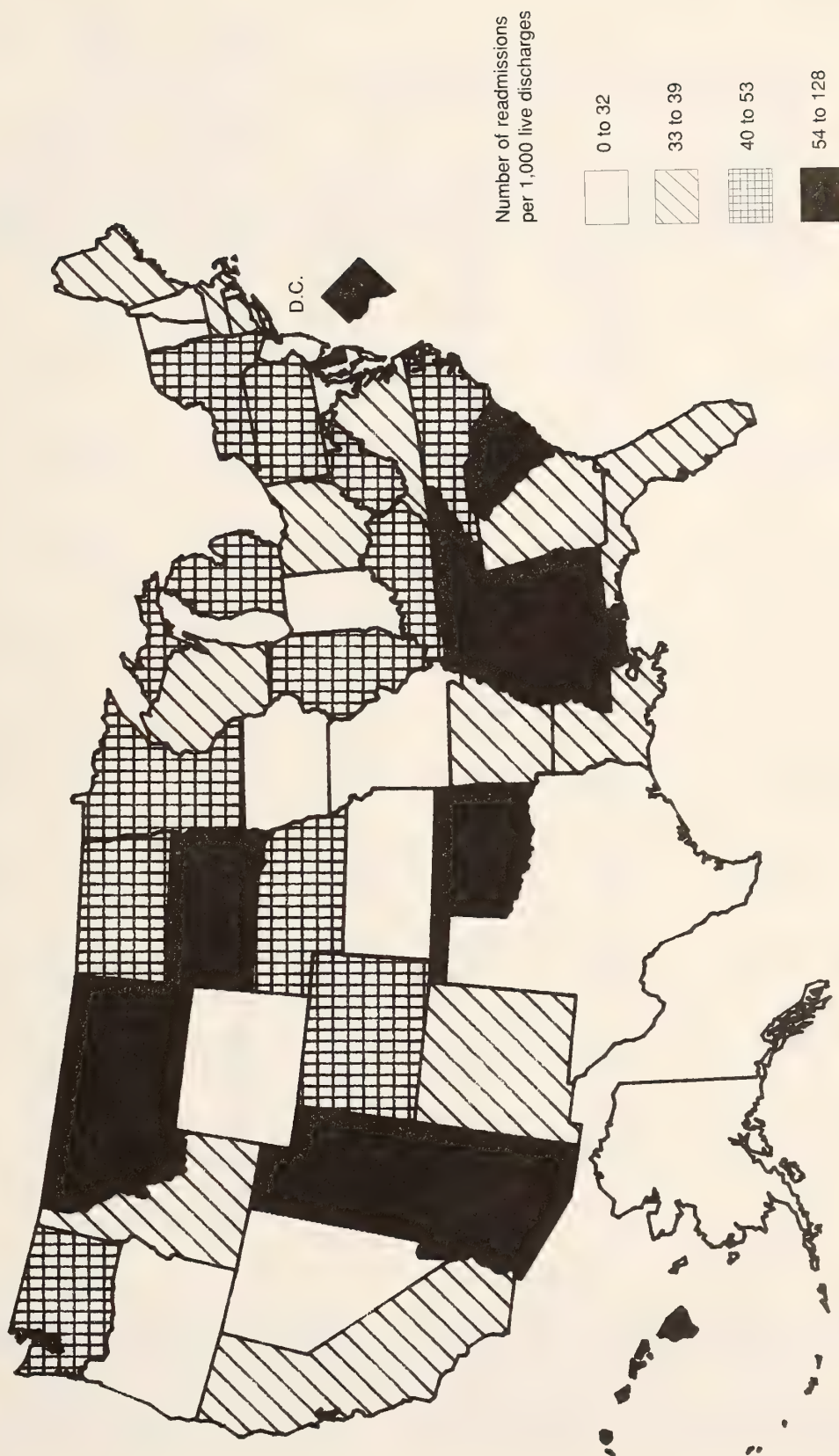
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 1b. Partial excision of the large intestine without cancer: Number of readmissions with an adverse event per 1,000 live discharges for aged Medicare enrollees, by State: 1986 index stays



NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 2b. Partial excision of the large intestine without cancer: Number of readmissions with an adverse event in Event Group 1 (intestinal obstruction) per 1,000 live discharges for aged Medicare enrollees, by State: 1986 index stays



NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
United States	27,856	1.04	16.68	247	185	25,510
Metropolitan	20,650	1.07++	17.28	251	190	18,872
Rural	7,206	0.98--	14.95	236-	172--	6,638
Northeast	6,548	1.04	19.96	270++	203++	5,907
Metropolitan	5,760	1.04	20.36	271++	208++	5,189
Rural	788	1.11	17.01	264	169	718
New England	1,745	1.11++	18.77	290++	183	1,588
Metropolitan	1,471	1.10	19.25	290++	190	1,337
Rural	274	1.21+	16.21	292	150	251
Maine	180	1.17	16.64	306	150	171
Metropolitan	96	1.17	17.26	302	156	91
Rural	84	1.19	15.93	310	143	80
New Hampshire	129	1.12	17.12	333+	209	116
Metropolitan	82	1.11	19.02	390++	220	74
Rural	47	1.16	13.81	234	191	42
Vermont	74	1.18	20.20	378+	149	69
Metropolitan	10	0.96	24.70	400	200	10
Rural	64	1.22	19.50	375+	141	59
Massachusetts	751	1.06	18.94	278	188	670
Metropolitan	688	1.04	19.31	278	192	615
Rural	63	1.25	14.84	286	143	55
Rhode Island	184	1.39++	21.29	228	228	162
Metropolitan	184	1.39++	21.29	228	228	162
Rural	0	0.00	0.00	0	0	0
Connecticut	427	1.08	18.55	302+	169	400
Metropolitan	411	1.07	18.61	311++	170	385
Rural	16	1.32	17.00	63	125	15
Middle Atlantic	4,803	1.02	20.39	263+	211++	4,319
Metropolitan	4,289	1.02	20.74	265++	215++	3,852
Rural	514	1.06	17.43	249	179	467
New York	2,092	0.98--	21.94	279++	219++	1,841
Metropolitan	1,864	0.97--	22.10	275++	223++	1,641
Rural	228	1.03	20.59	316+	189	200
New Jersey	922	1.01	22.24	269	222++	835
Metropolitan	922	1.01	22.24	269	222++	835
Rural	0	0.00	0.00	0	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges				
	Within 90 days for any cause	With an event	Total (1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
United States	217	70	79	39	12	11	17
Metropolitan	214	70	78	38	11	12	17
Rural	225	68	80	40	12	10	17
Northeast	218	64	72	36	10	10	16
Metropolitan	219	67	75	36	11	11	17
Rural	213	46--	54-	33	7	4	10
New England	204	61	71	30	11	16	14
Metropolitan	210	68	80	31	13	19	16
Rural	171	24--	24--	20	0	4	0-
Maine	170	58	64	35	6	12	12
Metropolitan	154	44	55	11	11	11	22
Rural	188	75	75	63	0	13	0
New Hampshire	250	26	26-	0-	0	26	0
Metropolitan	284	41	41	0	0	41	0
Rural	190	0	0	0	0	0	0
Vermont	174	0-	0--	0	0	0	0
Metropolitan	100	0	0	0	0	0	0
Rural	186	0-	0-	0	0	0	0
Massachusetts	206	69	85	39	15	18	13
Metropolitan	216	75	93	42	16	20	15
Rural	91--	0-	0-	0	0	0	0
Rhode Island	210	68	80	12	12	31	25
Metropolitan	210	68	80	12	12	31	25
Rural	0	0	0	0	0	0	0
Connecticut	205	68	73	33	13	10	18
Metropolitan	203	70	75	34	13	10	18
Rural	267	0	0	0	0	0	0
Middle Atlantic	223	65	72	38	10	8-	17
Metropolitan	221	66	73	38	10	9	17
Rural	236	58	71	41	11	4	15
New York	207	66	74	42	7--	9	17
Metropolitan	206	69	76	41	7-	10	18
Rural	220	45	60	45	5	0	10
New Jersey	217	53-	56-	25-	12	7	12
Metropolitan	217	53-	56-	25-	12	7	12
Rural	0	0	0	0	0	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Pennsylvania	1,789	1.09	17.62	242	195	1,643
Metropolitan	1,503	1.09	18.13	251	199	1,376
Rural	286	1.08	14.91	196-	171	267
North Central	7,475	1.08++	16.12	249	181	6,853
Metropolitan	4,840	1.10++	16.91	257	187	4,416
Rural	2,635	1.05	14.66	235	170-	2,437
East North Central	5,100	1.07+	16.48	246	184	4,686
Metropolitan	3,708	1.07	16.96	252	189	3,388
Rural	1,392	1.08	15.21	230	172	1,298
Ohio	1,375	1.09	16.96	258	195	1,250
Metropolitan	1,092	1.11	17.23	264	196	990
Rural	283	1.02	15.94	237	191	260
Indiana	676	1.08	16.85	226	213	605
Metropolitan	414	1.04	17.81	237	208	372
Rural	262	1.17	15.32	210	221	233
Illinois	1,378	1.09	17.25	253	184	1,276
Metropolitan	1,012	1.06	17.78	264	191	928
Rural	366	1.17+	15.77	221	164	348
Michigan	985	1.00	15.42	227	165	909
Metropolitan	754	1.01	15.92	229	178	691
Rural	231	0.97	13.81	221	126--	218
Wisconsin	686	1.12	15.13	257	162	646
Metropolitan	436	1.18+	15.35	252	167	407
Rural	250	1.03	14.74	264	152	239
West North Central	2,375	1.10+	15.34	255	175	2,167
Metropolitan	1,132	1.20++	16.76	270	183	1,028
Rural	1,243	1.03	14.05	241	167	1,139
Minnesota	380	0.96	14.87	292	192	344
Metropolitan	184	0.98	16.45	310	223	164
Rural	196	0.94	13.38	276	163	180
Iowa	499	1.23++	14.73	253	142--	469
Metropolitan	176	1.29+	15.74	261	159	162
Rural	323	1.21+	14.17	248	133--	307
Missouri	728	1.11	16.87	266	196	651
Metropolitan	494	1.29++	17.81	277	188	448
Rural	234	0.86--	14.88	244	214	203

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Pennsylvania	243+	71	79	40	12	8	19
Metropolitan	243+	71	79	41	12	8	19
Rural	247	67	79	37	15	7	19
North Central	229+	68	76	36	13	11	16
Metropolitan	228	68	75	36	13	12	14
Rural	230	67	79	37	12	11	19
East North Central	231+	68	76	37	12	11	16
Metropolitan	226	68	76	38	13	11	14
Rural	244+	69	78	34	10	12	22
Ohio	247+	68	76	38	10	12	16
Metropolitan	240	64	70	34	11	10	14
Rural	273+	85	100	50	8	19	23
Indiana	218	61	69	18--	10	17	25
Metropolitan	199	65	75	22-	11	19	24
Rural	249	56	60	13-	9	13	26
Illinois	237	69	75	43	11	11	10-
Metropolitan	237	69	74	43	12	13	6--
Rural	236	69	78	43	9	6	20
Michigan	218	78	90	42	20	7	22
Metropolitan	216	75	90	49	20	3-	17
Rural	225	87	92	18	18	18	37
Wisconsin	220	60	65	33	11	11	11
Metropolitan	209	66	69	29	12	15	12
Rural	238	50	59	38	8	4	8
West North Central	225	66	76	36	13	12	15
Metropolitan	236	68	71	32	11	14	15
Rural	214	64	81	40	15	11	16
Minnesota	230	78	87	41	9	15	23
Metropolitan	220	98	98	55	6	18	18
Rural	239	61	78	28	11	11	28
Iowa	207	51	62	30	13	2	17
Metropolitan	222	43	43-	25	6	0	12
Rural	199	55	72	33	16	3	20
Missouri	241	69	77	32	14	17	14
Metropolitan	257	69	76	29	13	16	18
Rural	207	69	79	39	15	20	5

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
North Dakota	103	1.21	12.92	194	117-	91
Metropolitan	26	1.13	13.12	269	154	22
Rural	77	1.23	12.86	169	104-	69
South Dakota	102	1.06	13.68	255	147	94
Metropolitan	26	1.27	13.77	269	77	25
Rural	76	1.00	13.64	250	171	69
Nebraska	219	1.04	14.61	247	215	194
Metropolitan	83	1.18	15.52	265	229	73
Rural	136	0.97	14.05	235	206	121
Kansas	344	1.12	15.22	215	157	324
Metropolitan	143	1.16	16.71	210	140	134
Rural	201	1.09	14.17	219	169	190
South	9,101	1.01--	16.20	224--	178	8,363
Metropolitan	6,211	1.08++	16.55	222--	177	5,716
Rural	2,890	0.90--	15.45	228-	181	2,647
South Atlantic	4,845	1.04	16.42	224--	175	4,452
Metropolitan	3,623	1.09++	16.61	224--	174	3,329
Rural	1,222	0.90--	15.89	224	177	1,123
Delaware	73	1.04	15.99	164	219	66
Metropolitan	42	0.95	18.05	214	286	36
Rural	31	1.20	13.19	97	129	30
Maryland	506	1.16+	16.87	273	182	462
Metropolitan	467	1.18+	16.73	276	171	427
Rural	39	0.94	18.56	231	308	35
Dist. of Columbia	58	0.88	14.83	172	241	50
Metropolitan	58	0.88	14.83	172	241	50
Rural	0	0.00	0.00	0	0	0
Virginia	505	0.90--	16.33	196--	170	471
Metropolitan	343	0.97	16.27	169--	149	323
Rural	162	0.77--	16.45	253	216	148
West Virginia	264	1.08	16.66	212	189	240
Metropolitan	125	1.38++	16.74	192	192	113
Rural	139	0.91	16.58	230	187	127
North Carolina	569	0.83--	16.36	258	195	522
Metropolitan	304	0.88--	16.61	250	197	282
Rural	265	0.77--	16.07	268	192	240

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Intestinal obstruction	Other intestinal complications	Infectious complications related to surgery	General surgical complications
North Dakota	264	77	77	44	0	11	22
Metropolitan	364	136	136	91	0	0	45
Rural	232	58	58	29	0	14	14
South Dakota	202	106	138	74	11	32	21
Metropolitan	200	120	120	0	40	40	40
Rural	203	101	145	101+	0	29	14
Nebraska	186	62	72	41	15	0	15
Metropolitan	137-	27	27	14	14	0	0
Rural	215	83	99	58	17	0	25
Kansas	231	56	68	31	19	15	3
Metropolitan	246	60	60	30	7	22	0
Rural	221	53	74	32	26	11	5
South	211	72	82	42	9-	12	19
Metropolitan	204-	71	79	40	9-	12	18
Rural	227	74	88	47	11	10	20
South Atlantic	206	73	81	40	9	12	20
Metropolitan	203-	74	82	38	8-	14	22
Rural	216	68	80	45	12	8	16
Delaware	212	91	91	61	15	0	15
Metropolitan	222	83	83	28	28	0	28
Rural	200	100	100	100	0	0	0
Maryland	232	54	61	28	13	4	15
Metropolitan	227	56	61	30	9	5	16
Rural	286	29	57	0	57	0	0
Dist. of Columbia	200	80	80	80	0	0	0
Metropolitan	200	80	80	80	0	0	0
Rural	0	0	0	0	0	0	0
Virginia	206	68	72	38	6	8	19
Metropolitan	176	71	74	43	6	6	19
Rural	270	61	68	27	7	14	20
West Virginia	213	108+	121	42	8	25	46++
Metropolitan	239	150++	168++	44	9	44+	71++
Rural	189	71	79	39	8	8	24
North Carolina	222	63	77	42	6	10	19
Metropolitan	230	64	78	46	0	14	18
Rural	213	63	75	38	13	4	21

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
South Carolina	313	0.95	17.21	262	163	285
Metropolitan	200	1.07	17.24	260	175	181
Rural	113	0.79--	17.16	265	142	104
Georgia	561	1.00	16.41	246	166	509
Metropolitan	322	1.03	17.05	270	152	293
Rural	239	0.96	15.55	213	184	216
Florida	1,996	1.17++	16.27	202--	168-	1,847
Metropolitan	1,762	1.16++	16.50	208--	174	1,624
Rural	234	1.22+	14.52	158--	120--	223
East South Central	1,630	0.94--	17.33	237	203	1,474
Metropolitan	903	1.03	17.93	223	192	819
Rural	727	0.85--	16.58	254	217+	655
Kentucky	419	0.99	18.20	284	248++	367
Metropolitan	213	1.16	19.09	277	230	187
Rural	206	0.86--	17.28	291	267++	180
Tennessee	510	0.93--	18.46	196--	163	472
Metropolitan	347	1.01	18.82	184--	167	320
Rural	163	0.78--	17.67	221	153	152
Alabama	423	0.91--	15.57	227	189	387
Metropolitan	272	0.96	15.76	210	184	250
Rural	151	0.83--	15.25	258	199	137
Mississippi	278	0.96	16.62	255	230	248
Metropolitan	71	1.07	18.41	296	225	62
Rural	207	0.92	16.01	242	232	186
West South Central	2,626	1.02	15.10	217--	169-	2,437
Metropolitan	1,685	1.07	15.70	219--	175	1,568
Rural	941	0.93--	14.02	213--	159-	869
Arkansas	299	0.93-	16.31	211	201	272
Metropolitan	116	1.15	17.41	207	198	111
Rural	183	0.83--	15.61	213	202	161
Louisiana	423	1.02	15.72	225	163	387
Metropolitan	296	1.10	16.34	213	155	271
Rural	127	0.86-	14.28	252	181	116
Oklahoma	371	0.98	14.04	199-	154	350
Metropolitan	183	1.02	15.68	224	153	173
Rural	188	0.95	12.43	176--	154	177

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
South Carolina	161-	70	84	56	7	11	11
Metropolitan	144--	72	83	55	6	6	17
Rural	192	67	87	58	10	19	0
Georgia	208	75	83	37	12	18	16
Metropolitan	208	72	78	34	7	24	14
Rural	208	79	88	42	19	9	19
Florida	201	75	84	39	9	14	22
Metropolitan	200	76	84	36	9	15	23
Rural	211	67	85	63	4	4	13
East South Central	238	77	98+	58++	12	9	17
Metropolitan	219	73	94	56	13	10	15
Rural	263++	82	102	60+	11	9	20
Kentucky	232	79	90	44	14	19	14
Metropolitan	182	86	102	53	16	21	11
Rural	283+	72	78	33	11	17	17
Tennessee	218	74	93	66+	8	4	15
Metropolitan	203	66	75	56	6	3	9
Rural	250	92	132	86+	13	7	26
Alabama	256	72	101	57	16	5	23
Metropolitan	256	72	116	68+	20	4	24
Rural	255	73	73	36	7	7	22
Mississippi	258	89	113	65	12	12	16
Metropolitan	258	81	81	16	16	32	16
Rural	258	91	124	81+	11	5	16
West South Central	204	66	73	36	9	11	17
Metropolitan	198	61	65	33	8	11	13
Rural	215	76	87	41	9	13	24
Arkansas	228	63	77	33	7	11	26
Metropolitan	180	36	36	9	18	9	0
Rural	261	81	106	50	0	12	43+
Louisiana	235	90	96	39	13	21	23
Metropolitan	225	81	81	33	11	18	18
Rural	259	112	129	52	17	26	34
Oklahoma	203	77	97	57	11	3	26
Metropolitan	179	75	98	75+	6	0	17
Rural	226	79	96	40	17	6	34

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Texas	1,533	1.04	14.94	220--	169	1,428
Metropolitan	1,090	1.07	15.34	221-	182	1,013
Rural	443	0.99	13.96	217	138--	415
West	4,732	1.04	13.92	257	181	4,387
Metropolitan	3,839	1.05	14.29	260	188	3,551
Rural	893	1.00	12.35	242	151--	836
Mountain	1,331	1.11+	13.67	253	166	1,237
Metropolitan	848	1.18++	14.05	256	172	786
Rural	483	1.01	13.00	248	155	451
Montana	120	1.23	14.65	225	125-	110
Metropolitan	28	1.32	16.96	179	71	26
Rural	92	1.21	13.95	239	141	84
Idaho	146	1.33++	12.44	226	123-	137
Metropolitan	32	1.73+	12.69	250	63	31
Rural	114	1.25	12.37	219	140	106
Wyoming	32	0.75-	12.69	125	188	30
Metropolitan	7	0.57-	12.14	143	0	7
Rural	25	0.83	12.84	120	240	23
Colorado	299	1.12	12.79	234	174	282
Metropolitan	234	1.16	13.08	231	150	221
Rural	65	1.00	11.72	246	262	61
New Mexico	133	1.06	13.47	218	158	123
Metropolitan	72	1.40+	13.71	194	222	65
Rural	61	0.83-	13.20	246	82--	58
Arizona	390	1.12	14.56	249	172	360
Metropolitan	314	1.22+	15.04	242	175	287
Rural	76	0.84-	12.59	276	158	73
Utah	118	0.92	12.83	441++	203	111
Metropolitan	92	0.99	13.01	478++	239	85
Rural	26	0.74-	12.19	308	77	26
Nevada	93	1.14	15.17	269	194	84
Metropolitan	69	1.07	14.29	217	203	64
Rural	24	1.38	17.71	417	167	20

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Texas	192-	58	60-	31	7-	11	11
Metropolitan	196	56	58-	29	7	11	12
Rural	181	63	65	36	7	12	10
West	209	77	85	40	16+	12	17
Metropolitan	208	78+	86	41	15	12	18
Rural	213	73	80	36	22+	12	10-
Mountain	222	86+	103+	50	21+	11	21
Metropolitan	230	94+	113+	56	19	11	25
Rural	206	73	86	40	24+	9	13
Montana	282	100	127	73	9	9	36
Metropolitan	269	38	38	0	0	0	38
Rural	286	119	155+	95+	12	12	36
Idaho	168	88	95	36	29	22	7
Metropolitan	97	97	97	32	0	32	32
Rural	189	85	94	38	38	19	0
Wyoming	167	0	0	0	0	0	0
Metropolitan	143	0	0	0	0	0	0
Rural	174	0	0	0	0	0	0
Colorado	209	85	103	53	25	7	18
Metropolitan	204	95	118	63	32+	5	18
Rural	230	49	49	16	0	16	16
New Mexico	211	73	89	33	16	8	33
Metropolitan	231	92	92	15	0	15	62
Rural	190	52	86	52	34	0	0
Arizona	239	94	119+	58	22	14	22
Metropolitan	251	98	129+	70	17	17	21
Rural	192	82	82	14	41	0	27
Utah	216	90	99	63	18	9	9
Metropolitan	224	106	118	71	24	12	12
Rural	192	38	38	38	0	0	0
Nevada	238	83	83	24	24	0	36
Metropolitan	297	94	94	31	16	0	47
Rural	50	50	50	0	50	0	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Pacific	3,401	1.02	14.02	258	187	3,150
Metropolitan	2,991	1.02	14.35	261	193	2,765
Rural	410	0.98	11.59	234	146-	385
Washington	519	1.12	13.05	297+	175	489
Metropolitan	390	1.12	13.66	305+	185	367
Rural	129	1.12	11.23	271	147	122
Oregon	268	0.88--	12.71	295	157	248
Metropolitan	152	0.84--	13.14	303	164	141
Rural	116	0.95	12.13	284	147	107
California	2,545	1.03	14.29	247	195	2,348
Metropolitan	2,408	1.03	14.47	251	198	2,217
Rural	137	0.93	11.14	175-	146	131
Alaska	18	1.10	14.33	167	56	18
Metropolitan	5	0.89	12.00	200	0	5
Rural	13	1.21	15.23	154	77	13
Hawaii	51	0.64--	16.88	235	118	47
Metropolitan	36	0.62--	19.11	278	83	35
Rural	15	0.67-	11.53	133	200	12

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Pacific	203	74	78	36	14	13	15
Metropolitan	201-	74	79	37	13	13	16
Rural	221	73	73	31	18	16	5
Washington	207	82	84	43	16	12	10
Metropolitan	202	79	82	41	16	14	11
Rural	221	90	90	49	16	8	8
Oregon	177	65	65	20	20	12	12
Metropolitan	184	71	71	14	21	14	21
Rural	168	56	56	28	19	9	0
California	205	72	77	34	13	13	17
Metropolitan	202	72	77	35	12	13	17
Rural	260	76	76	23	23	23	8
Alaska	222	56	56	0	0	56	0
Metropolitan	0	0	0	0	0	0	0
Rural	308	77	77	0	0	77	0
Hawaii	213	128	149	128+	21	0	0
Metropolitan	229	171	200+	171++	29	0	0
Rural	167	0	0	0	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
United States	27,856	1.04	16.68	247	185	25,510
Northeast	6,548	1.04	19.96	270++	203++	5,907
New England	1,745	1.11++	18.77	290++	183	1,588
Maine	180	1.17	16.64	306	150	171
Bangor	11	0.69	17.91	364	91	11
Lewiston-Auburn	25	1.86+	15.92	120	200	24
Portland	60	1.14	17.70	367	150	56
New Hampshire	129	1.12	17.12	333+	209	116
Manchester	48	1.08	21.15	375	208	43
Portsmouth	34	1.14	16.03	412	235	31
Vermont	74	1.18	20.20	378+	149	69
Burlington	10	0.96	24.70	400	200	10
Massachusetts	751	1.06	18.94	278	188	670
Boston	449	1.04	20.00	290+	169	405
New Bedford	56	0.85	20.00	232	250	49
Pittsfield	20	0.99	17.75	300	150	18
Springfield	85	1.18	16.61	259	224	74
Worcester	78	1.10	18.23	256	256	69
Rhode Island	184	1.39++	21.29	228	228	162
Providence	184	1.39++	21.29	228	228	162
Connecticut	427	1.08	18.55	302+	169	400
Bridgeport	86	0.89	20.38	302	209	81
Hartford	178	1.13	17.67	303	152	165
New Haven	122	1.18	18.95	361++	189	116
New London	25	0.91	17.48	160	80	23

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges				
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
United States	217	70	79	39	12	11	17
Northeast	218	64	72	36	10	10	16
New England	204	61	71	30	11	16	14
Maine	170	58	64	35	6	12	12
Bangor	91	91	91	0	0	91	0
Lewiston-Auburn	125	42	42	42	0	0	0
Portland	179	36	54	0	18	0	36
New Hampshire	250	26	26-	0-	0	26	0
Manchester	302	47	47	0	0	47	0
Portsmouth	258	32	32	0	0	32	0
Vermont	174	0-	0--	0	0	0	0
Burlington	100	0	0	0	0	0	0
Massachusetts	206	69	85	39	15	18	13
Boston	222	72	94	44	20	20	10
New Bedford	224	102	102	41	0	20	41
Pittsfield	167	56	56	0	0	56	0
Springfield	162	68	81	54	14	0	14
Worcester	246	87	101	29	14	29	29
Rhode Island	210	68	80	12	12	31	25
Providence	210	68	80	12	12	31	25
Connecticut	205	68	73	33	13	10	18
Bridgeport	222	86	86	49	12	0	25
Hartford	212	67	79	18	24	12	24
New Haven	190	69	69	52	0	17	0
New London	130	43	43	0	0	0	43

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Middle Atlantic	4,803	1.02	20.39	263+	211++	4,319
New York	2,092	0.98--	21.94	279++	219++	1,841
Albany	130	1.13	23.49	308	208	117
Binghamton	34	0.96	13.71	324	118	32
Buffalo	153	1.14	25.29	235	216	134
Elmira	11	0.80	10.82	273	182	9
Glens Falls	22	1.45	15.00	409	182	21
Nassau-Suffolk	274	0.92-	20.52	237	175	256
New York	876	0.88--	23.91	275	256++	746
Niagara Falls	33	1.07	21.15	212	182	29
Orange County	34	1.12	19.09	176	176	32
Poughkeepsie	33	1.18	22.79	424	212	30
Rochester	133	1.30+	18.25	293	203	120
Syracuse	75	1.00	17.61	253	213	66
Utica-Rome	56	1.20	16.89	393+	214	49
New Jersey	922	1.01	22.24	269	222++	835
Atlantic City	39	0.84	20.92	231	231	36
Bergen-Passaic	174	1.02	23.13	172--	195	158
Jersey City	55	0.86	30.45	345	291	48
Middlesex	78	0.86	19.31	231	269	69
Monmouth-Ocean	175	1.13	20.71	320+	177	162
Newark	211	1.00	23.19	275	242	190
Trenton	46	1.19	20.07	391+	239	42
Vineland	11	0.67	17.55	273	0	11
Pennsylvania	1,789	1.09	17.62	242	195	1,643
Allentown	112	1.18	15.87	348+	125	106
Altoona	26	1.26	18.38	231	423+	21
Beaver County	35	1.27	15.03	343	114	32
Erie	44	1.25	18.20	273	250	41
Harrisburg	84	1.15	14.30	202	131	83
Johnstown	40	0.99	17.93	300	250	35
Lancaster	33	0.69--	18.18	303	394+	26
Philadelphia	649	1.14+	20.54	257	220+	580
Pittsburgh	343	1.06	18.25	254	169	318
Reading	33	0.68--	18.61	273	152	31
Scranton	132	1.07	16.48	189	250	123
Sharon	24	1.26	16.58	208	42	24
State College	4	0.40--	17.75	250	500	4
Williamsport	10	0.59-	16.30	100	200	9
York	54	1.11	15.44	185	222	49

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges				
	Within 90 days for any cause	With an event	Total(1)	Intestinal obstruction	Other intestinal complications	Infectious complications related to surgery	General surgical complications
Middle Atlantic	223	65	72	38	10	8-	17
New York	207	66	74	42	7--	9	17
Albany	222	94	94	43	0	9	43
Binghamton	94	0	0	0	0	0	0
Buffalo	134--	60	60	22	0	7	30
Elmira	444	222	222	0	111	111	0
Glens Falls	429	95	143	48	0	48	48
Nassau-Suffolk	242	74	78	47	8	16	8
New York	201	71	78	44	9	7	17
Niagara Falls	207	34	34	34	0	0	0
Orange County	156	0	0	0	0	0	0
Poughkeepsie	300	167	167	100	0	33	33
Rochester	208	50	83	67	0	8	8
Syracuse	212	76	76	15	15	15	30
Utica-Rome	143	20	20	20	0	0	0
New Jersey	217	53-	56-	25-	12	7	12
Atlantic City	194	28	28	28	0	0	0
Bergen-Passaic	184	51	51	19	13	13	6
Jersey City	313	63	63	42	21	0	0
Middlesex	290	58	58	29	0	14	14
Monmouth-Ocean	210	43	49	19	12	6	12
Newark	242	79	89	47	16	5	21
Trenton	167	0	0	0	0	0	0
Vineland	273	91	91	0	91	0	0
Pennsylvania	243+	71	79	40	12	8	19
Allentown	132--	66	66	19	9	9	28
Altoona	238	95	95	48	48	0	0
Beaver County	188	31	31	0	0	31	0
Erie	268	73	73	49	0	0	24
Harrisburg	157	60	60	0	12	12	36
Johnstown	200	86	86	57	0	29	0
Lancaster	154	0	0	0	0	0	0
Philadelphia	238	67	76	45	12	9	10
Pittsburgh	280+	82	88	35	19	6	28
Reading	226	65	65	65	0	0	0
Scranton	317+	106	138+	89+	0	8	41
Sharon	208	42	42	0	0	0	42
State College	500	0	0	0	0	0	0
Williamsport	333	111	111	0	111	0	0
York	184	0	0-	0	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
North Central	7,475	1.08++	16.12	249	181	6,853
East North Central	5,100	1.07+	16.48	246	184	4,686
Ohio	1,375	1.09	16.96	258	195	1,250
Akron	79	1.04	18.03	278	203	70
Canton	56	1.08	15.45	304	196	49
Cincinnati	174	1.09	17.18	190	218	155
Cleveland	263	1.08	17.79	259	183	240
Columbus	171	1.41++	17.51	316	211	154
Dayton	95	0.92	17.84	305	253	84
Hamilton	25	0.96	17.88	320	200	23
Lima	20	1.02	11.50	150	200	20
Lorain-Elyria	34	1.24	17.18	265	176	32
Mansfield	13	0.85	17.54	385	77	13
Steubenville	21	0.96	14.43	95	190	19
Toledo	104	1.47++	17.21	260	173	99
Youngstown	70	1.01	17.66	186	171	61
Indiana	676	1.08	16.85	226	213	605
Anderson	20	1.16	16.45	200	300	16
Bloomington	8	1.01	17.25	250	375	7
Elkhart-Goshen	15	0.96	13.00	133	0	15
Evansville	35	1.02	14.20	257	171	32
Fort Wayne	31	0.83	14.45	129	226	28
Gary-Hammond	55	0.90	19.85	164	291	46
Indianapolis	123	1.04	20.39	301	203	112
Kokomo	10	0.92	15.20	100	300	9
Lafayette	13	1.16	21.46	462	154	12
Muncie	18	1.31	22.28	167	111	16
South Bend	35	1.06	15.91	229	143	33
Terre Haute	17	0.87	16.71	294	235	15
Illinois	1,378	1.09	17.25	253	184	1,276
Aurora-Elgin	30	0.97	12.33	267	67	29
Bloomington	27	2.13++	16.93	185	74	25
Champaign	12	0.90	19.58	333	83	12
Chicago	623	1.02	18.81	263	223+	563
Decatur	21	1.31	19.24	381	143	18
Joliet	43	1.53+	16.09	349	256	37
Kankakee	18	1.50	15.72	167	111	17
Lake County	21	0.58--	19.67	238	48	21
Peoria	41	0.94	16.59	268	171	39
Rockford	29	1.02	18.00	310	207	27
Springfield	29	1.17	18.55	172	103	29

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
North Central	229+	68	76	36	13	11	16
East North Central	231+	68	76	37	12	11	16
Ohio	247+	68	76	38	10	12	16
Akron	271	57	57	43	14	0	0
Canton	143	41	41	0	0	20	20
Cincinnati	219	58	58	39	6	6	6
Cleveland	275+	63	71	46	13	4	8
Columbus	273	65	71	39	6	6	19
Dayton	286	107	107	24	24	24	36
Hamilton	261	130	130	43	43	43	0
Lima	300	0	0	0	0	0	0
Lorain-Elyria	94	94	94	31	0	31	31
Mansfield	154	77	77	77	0	0	0
Steubenville	105	53	53	0	0	0	53
Toledo	162	40	40	30	0	0	10
Youngstown	197	66	98	33	16	16	33
Indiana	218	61	69	18--	10	17	25
Anderson	125	125	125	63	0	0	63
Bloomington	286	143	143	0	0	0	143
Elkhart-Goshen	200	0	0	0	0	0	0
Evansville	188	31	31	0	0	31	0
Fort Wayne	107	71	71	0	0	0	71
Gary-Hammond	217	109	130	43	22	22	43
Indianapolis	205	63	71	18	18	27	9
Kokomo	444	0	0	0	0	0	0
Lafayette	250	83	83	0	0	83	0
Muncie	63	63	63	0	63	0	0
South Bend	152	30	30	0	0	30	0
Terre Haute	133	133	267	200+	0	0	67
Illinois	237	69	75	43	11	11	10-
Aurora-Elgin	138	69	69	0	0	34	34
Bloomington	280	80	80	0	0	40	40
Champaign	333	167	167	167	0	0	0
Chicago	263+	78	83	53	12	11	7
Decatur	56	0	0	0	0	0	0
Joliet	297	0	0	0	0	0	0
Kankakee	59	118	118	59	0	59	0
Lake County	143	0	0	0	0	0	0
Peoria	205	128	154	103	26	26	0
Rockford	111	0	0	0	0	0	0
Springfield	241	34	34	0	0	34	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Michigan	985	1.00	15.42	227	165	909
Ann Arbor	15	0.84	16.33	267	200	14
Battle Creek	15	0.89	16.93	267	267	15
Benton Harbor	14	0.65-	15.50	214	214	13
Detroit	458	1.02	16.64	216	168	425
Flint	50	1.16	19.12	280	260	40
Grand Rapids	63	0.98	14.57	238	222	55
Jackson	27	1.58	11.15	259	185	24
Kalamazoo	26	1.21	12.54	385	154	23
Lansing	33	1.02	15.36	152	152	32
Muskegon	20	1.06	11.10	150	100	19
Saginaw	33	0.78	13.09	273	121	31
Wisconsin	686	1.12	15.13	257	162	646
Appleton	54	1.57+	14.41	278	93-	51
Eau Claire	16	0.94	14.19	563+	188	15
Green Bay	19	0.99	14.53	211	53	18
Janesville	16	0.97	14.63	0-	188	14
Kenosha	20	1.40	15.90	450	150	19
LaCrosse	22	1.86+	15.09	91	182	22
Madison	27	0.88	13.63	407	222	23
Milwaukee	199	1.19	16.50	246	176	187
Racine	28	1.37	15.25	107	179	27
Sheboygan	14	0.97	11.50	143	214	13
Wausau	12	0.93	12.33	333	167	11
West North Central	2,375	1.10+	15.34	255	175	2,167
Minnesota	380	0.96	14.87	292	192	344
Duluth	28	0.93	19.79	464+	214	24
Minneapolis	137	0.97	15.85	255	248	121
Rochester	10	1.06	12.80	500	0	10
St. Cloud	13	1.06	18.85	462	308	11
Iowa	499	1.23++	14.73	253	142--	469
Cedar Rapids	19	0.98	16.89	263	105	18
Davenport	70	1.57++	12.06	100--	100-	69
Des Moines	54	1.35	18.91	333	204	48
Dubuque	11	0.96	14.00	182	182	10
Iowa City	13	2.08+	19.08	462	154	12
Sioux City	30	1.88+	11.93	267	233	26
Waterloo	31	1.59	12.26	290	97	28

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Michigan	218	78	90	42	20	7	22
Ann Arbor	214	71	71	71	0	0	0
Battle Creek	200	200	200	67	67	0	67
Benton Harbor	385	231	308+	77	154+	0	77
Detroit	219	64	73	35	16	0-	21
Flint	250	75	75	50	0	25	0
Grand Rapids	182	36	73	36	36	0	0
Jackson	208	42	42	0	42	0	0
Kalamazoo	130	130	130	87	43	0	0
Lansing	250	156	250++	250++	0	0	0
Muskegon	211	53	53	53	0	0	0
Saginaw	161	97	97	32	0	32	32
Wisconsin	220	60	65	33	11	11	11
Appleton	176	78	98	20	0	20	59
Eau Claire	200	0	0	0	0	0	0
Green Bay	222	0	0	0	0	0	0
Janesville	143	71	71	0	71	0	0
Kenosha	105	53	53	0	0	53	0
LaCrosse	227	45	45	45	0	0	0
Madison	43	87	87	87	0	0	0
Milwaukee	230	75	75	37	21	11	5
Racine	259	74	74	0	0	37	37
Sheboygan	385	77	77	0	0	77	0
Wausau	91	0	0	0	0	0	0
West North Central	225	66	76	36	13	12	15
Minnesota	230	78	87	41	9	15	23
Duluth	292	167	167	83	0	83	0
Minneapolis	215	99	99	66	8	8	17
Rochester	0	0	0	0	0	0	0
St. Cloud	364	91	91	0	0	0	91
Iowa	207	51	62	30	13	2	17
Cedar Rapids	222	111	111	56	56	0	0
Davenport	261	72	72	29	29	0	14
Des Moines	292	21	21	21	0	0	0
Dubuque	200	100	100	100	0	0	0
Iowa City	167	0	0	0	0	0	0
Sioux City	192	38	38	0	0	0	38
Waterloo	107	0	0	0	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Missouri	728	1.11	16.87	266	196	651
Columbia	10	1.17	17.70	200	300	9
Joplin	27	1.40	18.04	185	185	27
Kansas City	205	1.32++	18.30	278	180	190
St. Joseph	20	1.47	17.30	450	50	20
St. Louis	354	1.25++	17.17	280	178	317
Springfield	23	0.83	17.13	174	130	21
North Dakota	103	1.21	12.92	194	117-	91
Bismarck	11	1.35	13.36	273	91	10
Fargo	15	1.06	12.47	133	67	14
Grand Forks	5	0.88	14.80	400	400	3
South Dakota	102	1.06	13.68	255	147	94
Rapid City	11	1.54	12.55	273	0	11
Sioux Falls	15	1.13	14.67	267	133	14
Nebraska	219	1.04	14.61	247	215	194
Lincoln	22	1.05	15.18	273	136	20
Omaha	62	1.08	16.53	226	258	56
Kansas	344	1.12	15.22	215	157	324
Lawrence	3	0.60	9.67	0	0	3
Topeka	18	0.95	16.44	167	111	17
Wichita	42	0.92	16.33	262	214	37
South	9,101	1.01--	16.20	224--	178	8,363
South Atlantic	4,845	1.04	16.42	224--	175	4,452
Delaware	73	1.04	15.99	164	219	66
Wilmington	66	1.14	15.83	152-	227	60
Maryland	506	1.16+	16.87	273	182	462
Baltimore	293	1.20+	16.85	307+	171	264
Cumberland	24	1.41	17.79	250	208	23
Hagerstown	21	1.45	13.33	143	143	20
Dist. of Columbia	58	0.88	14.83	172	241	50
Washington	245	0.95	16.20	220	184	226
Virginia	505	0.90--	16.33	196--	170	471
Charlottesville	8	0.67	15.25	375	250	7
Danville	11	0.71	15.36	91	0	11
Lynchburg	19	1.05	19.16	105	211	18
Norfolk	120	1.16	16.03	150--	167	111
Richmond	91	1.06	16.01	187	132	86
Roanoke	24	0.78	20.38	208	125	22

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Missouri	241	69	77	32	14	17	14
Columbia	444	0	0	0	0	0	0
Joplin	222	0	0	0	0	0	0
Kansas City	263	84	84	26	21	21	16
St. Joseph	350	200	250+	50	50	50	100
St. Louis	202	54	63	35	9	9	9
Springfield	333	95	95	48	0	48	0
North Dakota	264	77	77	44	0	11	22
Bismarck	400	300	300	200	0	0	100
Fargo	429	0	0	0	0	0	0
Grand Forks	0	0	0	0	0	0	0
South Dakota	202	106	138	74	11	32	21
Rapid City	91	91	91	0	0	91	0
Sioux Falls	286	143	143	0	71	0	71
Nebraska	186	62	72	41	15	0	15
Lincoln	200	50	50	0	50	0	0
Omaha	143	18	18	18	0	0	0
Kansas	231	56	68	31	19	15	3
Lawrence	333	0	0	0	0	0	0
Topeka	294	59	59	0	0	59	0
Wichita	351	54	54	27	0	27	0
South	211	72	82	42	9-	12	19
South Atlantic	206	73	81	40	9	12	20
Delaware	212	91	91	61	15	0	15
Wilmington	267	67	67	17	17	17	17
Maryland	232	54	61	28	13	4	15
Baltimore	201	61	64	27	8	4	27
Cumberland	304	43	43	43	0	0	0
Hagerstown	200	50	50	0	50	0	0
Dist. of Columbia	200	80	80	80	0	0	0
Washington	204	58	62	44	4	0	13
Virginia	206	68	72	38	6	8	19
Charlottesville	143	286	286	143	0	0	143
Danville	0	0	0	0	0	0	0
Lynchburg	278	56	56	56	0	0	0
Norfolk	198	45	45	36	0	0	9
Richmond	186	105	105	58	23	23	0
Roanoke	91	45	91	91	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
West Virginia	264	1.08	16.66	212	189	240
Charleston	50	1.46+	15.46	100--	120	49
Huntington	30	0.73-	21.00	267	267	25
Parkersburg	34	1.71+	17.24	412	324	28
Wheeling	25	1.14	17.00	240	200	22
North Carolina	569	0.83--	16.36	258	195	522
Asheville	21	0.86	13.14	48	143	19
Burlington	10	0.69	18.70	200	100	9
Charlotte	77	0.70--	16.66	221	260	69
Fayetteville	15	1.12	17.67	67	267	15
Greensboro	85	0.86-	17.25	282	235	75
Hickory	25	1.07	14.92	200	160	25
Jacksonville	5	0.97	9.60	0	200	5
Raleigh-Durham	64	1.13	16.92	406++	141	62
Wilmington	14	1.11	20.07	214	0	14
South Carolina	313	0.95	17.21	262	163	285
Anderson	12	0.72	19.00	250	333	11
Charleston	43	1.26	18.86	233	209	38
Columbia	44	1.24	19.61	182	159	39
Florence	9	0.80	15.67	0	0	9
Greenville	66	1.00	13.80	303	106-	63
Georgia	561	1.00	16.41	246	166	509
Albany	11	1.18	18.00	364	182	10
Athens	15	1.11	14.67	333	200	14
Atlanta	192	1.01	16.73	297	151	175
Augusta	31	0.94	22.26	419	290	24
Columbus	13	0.57--	15.08	231	154	12
Macon	30	1.16	14.63	100	100	29
Savannah	31	1.22	17.87	161	161	28

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
West Virginia	213	108+	121	42	8	25	46++
Charleston	224	204++	204+	20	20	102++	61
Huntington	320	80	80	40	0	40	0
Parkersburg	321	107	179	0	36	36	107+
Wheeling	227	136	182	136	0	0	45
North Carolina	222	63	77	42	6	10	19
Asheville	316	53	53	53	0	0	0
Burlington	222	111	222	222	0	0	0
Charlotte	261	58	87	72	0	14	0
Fayetteville	267	0	0	0	0	0	0
Greensboro	213	40	53	40	0	13	0
Hickory	160	80	80	0	0	40	40
Jacksonville	0	0	0	0	0	0	0
Raleigh-Durham	258	113	129	65	0	16	48
Wilmington	143	71	71	0	0	0	71
South Carolina	161-	70	84	56	7	11	11
Anderson	273	91	182	182	0	0	0
Charleston	105	53	53	26	0	0	26
Columbia	179	26	26	26	0	0	0
Florence	0	0	0	0	0	0	0
Greenville	79--	127	127	63	16	16	32
Georgia	208	75	83	37	12	18	16
Albany	500	300	300	100	0	100	100
Athens	214	0	0	0	0	0	0
Atlanta	229	69	74	34	11	23	6
Augusta	333	42	42	0	0	0	42
Columbus	333	0	0	0	0	0	0
Macon	69	0	0	0	0	0	0
Savannah	143	143	179	71	0	71	36

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Florida	1,996	1.17++	16.27	202--	168-	1,847
Bradenton	59	1.38	17.19	288	136	54
Daytona Beach	76	1.21	17.03	224	184	71
Fort Lauderdale	195	1.07	17.85	221	200	177
Fort Myers	70	1.14	13.54	114--	129	66
Fort Pierce	60	1.46+	14.85	167	217	52
Ft. Walton Beach	18	1.77	15.50	278	278	16
Gainesville	13	0.78	9.23	0	77	13
Jacksonville	89	1.10	17.80	258	202	81
Lakeland	60	1.08	14.80	83--	167	55
Melbourne	56	1.20	15.73	89--	143	51
Miami-Hialeah	156	0.93	18.42	237	244	134
Naples	28	1.19	14.29	143	143	25
Ocala	31	0.99	16.06	258	161	29
Orlando	112	1.24	15.41	188	125	109
Panama City	11	0.93	17.00	273	273	10
Pensacola	29	0.97	19.38	310	138	28
Sarasota	98	1.26	15.61	255	112-	93
Tallahassee	15	0.86	18.67	200	333	14
Tampa	436	1.35++	16.88	202-	163	408
West Palm Beach	150	1.07	15.19	233	180	138
East South Central	1,630	0.94--	17.33	237	203	1,474
Kentucky	419	0.99	18.20	284	248++	367
Lexington	29	0.94	18.31	241	138	27
Louisville	151	1.40++	17.86	278	225	133
Owensboro	7	0.68	19.57	571	286	5
Tennessee	510	0.93--	18.46	196--	163	472
Chattanooga	59	1.18	17.63	153-	169	55
Clarksville	17	1.36	19.00	176	59	16
Jackson	14	1.39	30.93	357	71	13
Johnson City	36	0.65--	15.89	194	139	34
Knoxville	57	0.80-	15.23	105--	123	54
Memphis	71	0.80--	22.65	211	254	58
Nashville	131	1.41++	17.95	206	168	125
Alabama	423	0.91--	15.57	227	189	387
Anniston	14	1.07	16.71	429	71	14
Birmingham	92	0.85-	16.01	250	185	85
Dothan	16	1.26	14.69	188	375	14
Florence	14	0.84	15.36	0	71	14
Gadsden	11	0.77	14.00	91	91	10
Huntsville	12	0.70	20.17	417	167	10
Mobile	61	1.21	14.16	131--	246	53
Montgomery	24	0.80	19.25	208	125	22
Tuscaloosa	23	1.69	15.30	261	130	23

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Florida	201	75	84	39	9	14	22
Bradenton	259	74	74	19	19	0	37
Daytona Beach	155	113	113	56	0	28	28
Fort Lauderdale	226	68	73	23	11	11	28
Fort Myers	197	91	106	30	0	15	61
Fort Pierce	115-	58	77	38	19	19	0
Ft. Walton Beach	63	0	0	0	0	0	0
Gainesville	77	0	0	0	0	0	0
Jacksonville	198	74	86	49	0	12	25
Lakeland	127-	55	55	36	0	18	0
Melbourne	137	39	39	20	0	0	20
Miami-Hialeah	276	67	67	37	7	15	7
Naples	120	0	0	0	0	0	0
Ocala	207	138	138	69	0	34	34
Orlando	220	156++	156+	92+	9	9	46
Panama City	100	100	100	0	0	100	0
Pensacola	214	107	143	36	0	36	71
Sarasota	204	65	65	22	11	22	11
Tallahassee	357	214	357+	143	0	71	143+
Tampa	201	64	71	22-	12	15	22
West Palm Beach	181	80	94	51	22	14	7
East South Central	238	77	98+	58++	12	9	17
Kentucky	232	79	90	44	14	19	14
Lexington	111	111	111	0	74	0	37
Louisville	218	83	105	60	8	23	15
Owensboro	400	0	0	0	0	0	0
Tennessee	218	74	93	66+	8	4	15
Chattanooga	164	55	55	36	0	0	18
Clarksville	250	0	0	0	0	0	0
Jackson	385	154	154	77	0	0	77
Johnson City	206	59	59	29	0	0	29
Knoxville	167	56	56	56	0	0	0
Memphis	172	17	34	17	0	17	0
Nashville	224	96	112	88+	16	0	8
Alabama	256	72	101	57	16	5	23
Anniston	71	143	143	71	71	0	0
Birmingham	306	82	106	35	12	0	59+
Dothan	143	0	0	0	0	0	0
Florence	214	71	357+	357++	0	0	0
Gadsden	100	100	100	0	0	0	100
Huntsville	100	100	100	100	0	0	0
Mobile	283	94	170	94	57+	19	0
Montgomery	227	45	91	91	0	0	0
Tuscaloosa	348	0	0	0	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Mississippi	278	0.96	16.62	255	230	248
Biloxi-Gulfport	15	0.83	15.40	133	333	11
Jackson	37	1.05	20.84	432	243	32
Pascagoula	17	1.99+	16.06	176	118	17
West South Central	2,626	1.02	15.10	217--	169-	2,437
Arkansas	299	0.93-	16.31	211	201	272
Fayetteville	14	1.19	15.43	214	143	14
Fort Smith	17	0.79	12.12	59	235	16
Little Rock	73	1.43+	18.40	219	192	70
Pine Bluff	9	0.82	17.22	222	0	9
Louisiana	423	1.02	15.72	225	163	387
Alexandria	11	0.80	14.09	91	0	11
Baton Rouge	40	1.01	12.73	200	100	39
Houma-Thibodaux	16	1.19	15.19	125	125	15
Lafayette	16	1.09	13.81	313	125	15
Lake Charles	23	1.40	15.61	261	174	21
Monroe	15	1.02	14.93	133	133	14
New Orleans	136	1.15	18.19	272	213	120
Shreveport	39	1.06	16.74	51--	77	36
Oklahoma	371	0.98	14.04	199-	154	350
Enid	11	1.34	10.91	273	182	10
Lawton	6	0.73	14.67	167	0	6
Oklahoma City	102	1.15	16.40	196	137	97
Tulsa	63	0.89	15.51	270	190	59

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges		Number of readmissions with an event per 1,000 live discharges				
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Mississippi	258	89	113	65	12	12	16
Biloxi-Gulfport	273	91	91	0	0	0	91
Jackson	250	63	63	0	31	31	0
Pascagoula	294	118	118	59	0	59	0
West South Central	204	66	73	36	9	11	17
Arkansas	228	63	77	33	7	11	26
Fayetteville	143	143	143	0	71	71	0
Fort Smith	188	0	0	0	0	0	0
Little Rock	186	29	29	14	14	0	0
Pine Bluff	222	0	0	0	0	0	0
Louisiana	235	90	96	39	13	21	23
Alexandria	182	182	182	182	0	0	0
Baton Rouge	231	51	51	0	0	26	26
Houma-Thibodaux	133	67	67	67	0	0	0
Lafayette	267	200	200	200+	0	0	0
Lake Charles	190	48	48	0	0	0	48
Monroe	143	0	0	0	0	0	0
New Orleans	250	83	83	25	25	17	17
Shreveport	222	83	83	0	0	56	28
Oklahoma	203	77	97	57	11	3	26
Enid	100	200	400+	400++	0	0	0
Lawton	0	167	167	167	0	0	0
Oklahoma City	206	93	113	82	10	0	21
Tulsa	153	17	17	0	0	0	17

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay					
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
Texas	1,533	1.04	14.94	220--	169	1,428
Abilene	11	0.84	14.73	182	273	10
Amarillo	15	0.79	13.47	267	67	15
Austin	50	1.05	14.06	240	260	45
Beaumont	58	1.37	16.93	207	241	56
Brazoria	14	1.12	18.29	357	143	13
Brownsville	25	1.24	16.80	240	200	23
Bryan	10	1.44	14.20	200	0	10
Corpus Christi	34	1.20	14.00	206	147	30
Dallas	198	1.15	14.94	227	217	184
El Paso	19	0.51--	20.63	316	53	19
Fort Worth	91	0.93	15.31	275	132	84
Galveston	23	1.19	17.65	304	217	21
Houston	195	1.04	16.09	210	154	179
Killeen-Temple	15	0.87	13.67	400	200	13
Laredo	9	1.07	15.00	222	0	9
Longview	17	0.83	14.47	176	235	15
Lubbock	29	1.53	15.48	172	414+	25
McAllen	28	1.02	11.21	0--	71	27
Midland	10	1.36	12.10	300	0	10
Odessa	7	0.76	15.43	143	143	7
San Angelo	6	0.54-	12.83	333	333	5
San Antonio	112	1.04	17.37	170-	214	103
Sherman-Denison	8	0.55-	12.38	250	250	8
Texarkana	9	0.59-	24.11	556	222	9
Tyler	24	1.32	11.50	208	83	23
Victoria	14	2.04+	15.50	143	214	13
Waco	30	1.27	11.10	267	67	29
Wichita Falls	29	2.01++	12.10	138	172	28
West	4,732	1.04	13.92	257	181	4,387
Mountain	1,331	1.11+	13.67	253	166	1,237
Montana	120	1.23	14.65	225	125-	110
Billings	15	1.24	14.27	200	0	15
Great Falls	13	1.43	20.08	154	154	11
Idaho	146	1.33++	12.44	226	123-	137
Boise City	32	1.73+	12.69	250	63	31
Wyoming	32	0.75-	12.69	125	188	30
Casper	5	0.93	12.20	200	0	5
Cheyenne	2	0.29	12.00	0	0	2

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Intestinal obstruction	Other intestinal complications	Infectious complications related to surgery	General surgical complications
Texas	192-	58	60-	31	7-	11	11
Abilene	500	0	0	0	0	0	0
Amarillo	0	133	133	133	0	0	0
Austin	244	89	111	67	44	0	0
Beaumont	268	36	36	0	18	0	18
Brazoria	308	77	77	0	0	0	77
Brownsville	217	130	130	87	0	0	43
Bryan	200	200	200	100	0	100	0
Corpus Christi	133	33	33	0	0	33	0
Dallas	158-	38-	43-	33	0	11	0
El Paso	211	263+	263+	158	0	105+	0
Fort Worth	155	24	24	12	0	0	12
Galveston	143	0	0	0	0	0	0
Houston	168	84	84	34	22	17	11
Killeen-Temple	231	0	0	0	0	0	0
Laredo	111	0	0	0	0	0	0
Longview	67	67	67	67	0	0	0
Lubbock	360	0	0	0	0	0	0
McAllen	111	37	37	0	0	0	37
Midland	200	0	0	0	0	0	0
Odessa	143	143	143	143	0	0	0
San Angelo	200	0	0	0	0	0	0
San Antonio	243	58	58	19	0	10	29
Sherman-Denison	375	0	0	0	0	0	0
Texarkana	222	0	0	0	0	0	0
Tyler	217	0	0	0	0	0	0
Victoria	308	0	0	0	0	0	0
Waco	207	103	103	34	0	34	34
Wichita Falls	286	36	36	0	0	0	36
West	209	77	85	40	16+	12	17
Mountain	222	86+	103+	50	21+	11	21
Montana	282	100	127	73	9	9	36
Billings	400	67	67	0	0	0	67
Great Falls	91	0	0	0	0	0	0
Idaho	168	88	95	36	29	22	7
Boise City	97	97	97	32	0	32	32
Wyoming	167	0	0	0	0	0	0
Casper	200	0	0	0	0	0	0
Cheyenne	0	0	0	0	0	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
Colorado	299	1.12	12.79	234	174	282
Boulder-Longmont	15	0.99	20.00	333	267	15
Colorado Springs	20	0.80	12.60	100	200	19
Denver	131	1.10	13.03	275	122-	123
Fort Collins	26	1.72+	10.35	192	154	24
Greeley	16	1.38	11.63	0-	0	16
Pueblo	26	1.69	13.35	231	269	24
New Mexico	133	1.06	13.47	218	158	123
Albuquerque	57	1.69++	13.77	211	211	52
Las Cruces	8	0.85	13.88	0	125	7
Santa Fe	7	0.83	13.00	286	429	6
Arizona	390	1.12	14.56	249	172	360
Phoenix	238	1.27++	14.67	248	181	217
Tucson	76	1.08	16.18	224	158	70
Utah	118	0.92	12.83	441++	203	111
Provo-Orem	15	0.93	12.40	600+	400	9
Salt Lake City	77	1.00	13.13	455++	208	76
Nevada	93	1.14	15.17	269	194	84
Las Vegas	44	0.97	14.75	205	227	41
Reno	25	1.31	13.48	240	160	23
Pacific	3,401	1.02	14.02	258	187	3,150
Washington	519	1.12	13.05	297+	175	489
Bellingham	14	1.03	9.93	500	214	13
Bremerton	15	0.97	11.20	67	200	15
Olympia	13	0.91	12.54	77	231	13
Richland	7	0.56-	10.71	143	0	7
Seattle	175	1.09	14.74	349++	183	164
Spokane	52	1.26	11.94	231	173	50
Tacoma	65	1.29	12.75	400+	246	57
Vancouver	20	1.17	17.45	250	150	19
Yakima	29	1.28	13.90	172	103	29
Oregon	268	0.88--	12.71	295	157	248
Eugene	21	0.73-	13.38	286	143	19
Medford	16	0.79	9.13	250	125	16
Portland	93	0.94	13.43	323	183	85
Salem	22	0.66--	14.64	273	136	21

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total (1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
Colorado	209	85	103	53	25	7	18
Boulder-Longmont	200	133	133	133	0	0	0
Colorado Springs	263	105	105	53	0	0	53
Denver	236	98	122	49	49++	8	16
Fort Collins	42	0	0	0	0	0	0
Greeley	125	125	125	63	0	0	63
Pueblo	208	125	208	167+	42	0	0
New Mexico	211	73	89	33	16	8	33
Albuquerque	231	58	58	19	0	0	38
Las Cruces	143	143	143	0	0	0	143
Santa Fe	333	333	333	0	0	167	167
Arizona	239	94	119+	58	22	14	22
Phoenix	240	92	120	55	18	18	28
Tucson	286	114	157	114+	14	14	0
Utah	216	90	99	63	18	9	9
Provo-Orem	222	111	111	0	0	111	0
Salt Lake City	224	105	118	79	26	0	13
Nevada	238	83	83	24	24	0	36
Las Vegas	317	98	98	24	24	0	49
Reno	261	87	87	43	0	0	43
Pacific	203	74	78	36	14	13	15
Washington	207	82	84	43	16	12	10
Bellingham	154	154	154	0	0	77	77
Bremerton	200	0	0	0	0	0	0
Olympia	385	0	0	0	0	0	0
Richland	286	143	143	0	0	0	143
Seattle	220	91	98	61	24	12	0
Spokane	160	80	80	20	0	20	40
Tacoma	158	70	70	18	35	18	0
Vancouver	53	0	0	0	0	0	0
Yakima	276	103	103	103	0	0	0
Oregon	177	65	65	20	20	12	12
Eugene	316	105	105	0	53	0	53
Medford	125	63	63	0	0	0	63
Portland	165	71	71	24	24	12	12
Salem	190	48	48	0	0	48	0

(1) Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Index stay			Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days			
California	2,545	1.03	14.29	247	195	2,348
Anaheim-Santa Ana	180	1.08	13.41	333+	217	165
Bakersfield	51	1.13	13.43	353	216	45
Chico	26	0.96	10.04	115	154	24
Fresno	70	1.20	12.86	300	171	66
Los Angeles	666	0.98	16.91	305++	236++	599
Merced	14	1.04	10.86	214	143	14
Modesto	34	1.01	15.24	235	206	32
Oakland	183	0.97	14.64	235	153	171
Oxnard-Ventura	47	0.95	14.94	255	149	44
Redding	26	1.46	10.81	231	154	24
Riverside	232	1.14	14.52	254	207	207
Sacramento	119	0.99	11.89	176-	160	112
Salinas	18	0.62--	11.39	167	167	17
San Diego	240	1.17	13.58	233	183	226
San Francisco	162	0.99	15.09	173-	191	151
San Jose	106	1.01	12.74	179	151	103
Santa Barbara	57	1.50+	12.61	123--	158	53
Santa Cruz	36	1.46	12.50	167	306	34
Santa Rosa	37	0.83	12.11	216	243	33
Stockton	42	1.03	13.24	214	167	40
Vallejo	27	0.75-	12.74	222	148	24
Visalia	20	0.69-	13.60	200	100	19
Yuba City	15	1.27	11.13	133	133	14
Alaska	18	1.10	14.33	167	56	18
Anchorage	5	0.89	12.00	200	0	5
Hawaii	51	0.64--	16.88	235	118	47
Honolulu	36	0.62--	19.11	278	83	35

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4b. Partial excision of the large intestine without cancer: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986 index stays

Area of residence	Number of persons with 1 readmission or more per 1,000 live discharges			Number of readmissions with an event per 1,000 live discharges			
	Within 90 days for any cause	With an event	Total(1)	Intes- tinal obstruc- tion	Other intestinal compli- cations	Infectious compli- cations related to surgery	General surgical compli- cations
California	205	72	77	34	13	13	17
Anaheim-Santa Ana	248	97	103	42	24	18	18
Bakersfield	178	133	133	67	44	0	22
Chico	208	42	42	42	0	0	0
Fresno	182	91	91	76	0	15	0
Los Angeles	219	82	90	45	12	13	20
Merced	214	71	71	71	0	0	0
Modesto	250	125	125	63	31	0	31
Oakland	193	41-	41-	18	18	6	0
Oxnard-Ventura	250	136	136	45	45	45	0
Redding	292	125	125	0	83	42	0
Riverside	188	72	77	19	14	10	34
Sacramento	152	71	71	45	9	9	9
Salinas	235	0	0	0	0	0	0
San Diego	235	71	75	22	4	31+	18
San Francisco	139--	46	60	33	7	0	20
San Jose	165	29	49	19	0	0	29
Santa Barbara	151	75	75	57	0	0	19
Santa Cruz	147	29	29	29	0	0	0
Santa Rosa	182	61	61	30	0	30	0
Stockton	100	50	50	0	0	25	25
Vallejo	333	42	42	0	0	0	42
Visalia	316	53	53	53	0	0	0
Yuba City	71	0	0	0	0	0	0
Alaska	222	56	56	0	0	56	0
Anchorage	0	0	0	0	0	0	0
Hawaii	213	128	149	128+	21	0	0
Honolulu	229	171	200+	171++	29	0	0

(1)Includes "other events" category.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Coronary artery bypass graft

The number of coronary artery bypass graft (CABG) surgeries has been increasing steadily in the past decade, especially among the population 65 years of age or over. According to data from the National Center for Health Statistics, 23 percent of the 114,000 CABGs performed in 1979 were for persons 65 years of age or over; by 1986, 41 percent of the 228,000 CABGs performed were for persons this age (Feinleib et al., 1989). There is considerable interest in determining the appropriate indications for this procedure and in understanding the outcomes of CABG. In 1986, a total of 72,824 CABG operations were performed on Medicare enrollees 65 years of age or over who did not have end stage renal disease and were not members of health maintenance organizations, for a rate of 2.73 procedures per 1,000 enrollees, as discussed in Volume 2.

This study is focused on CABG operations occurring in the 9-month period October 1, 1986, through June 30, 1987. This time period was chosen to match the case-selection period for percutaneous transluminal coronary angioplasty (PTCA). CABG and PTCA are often done for similar indications, and having the same period for selection facilitates comparison of the two procedures. As explained in the section on PTCA, the October-June period was chosen because of changes in the way PTCA was coded. It should be remembered that the rates in Volume 2 are for 1986 and the rates in this publication are for the 9-month period from October 1, 1986, through June 30, 1987.

For inclusion in this study, cases had to be categorized in diagnosis-related groups (DRGs) 106 (coronary bypass with cardiac catheterization) or 107 (coronary bypass without cardiac catheterization). However, records were excluded if procedure codes also appeared in the record for PTCA (ICD-9-CM procedure codes 36.01 or 36.02). Such stays were included in the PTCA tables. Records with a procedure code for certain heart valve operations (procedure codes 35.0-35.7); implantation of a heart assist system, such as balloon pump (procedure code 37.6); and carotid endarterectomy (procedure code 38.12) were also excluded. In addition, CABG stays with an ICD-9-CM diagnosis code indicating peripheral vascular disease (diagnosis codes 443.89 or 443.9) or aneurysm of heart (diagnosis code 414.1) were

excluded. These exclusions were made because it is likely that patients with these procedures or diagnoses would differ from the great majority of CABG patients. After these exclusions, a total of 53,715 patients with CABG were included in the analysis.

Rates for specific events

The focus of this study is on potentially adverse outcomes occurring either during the stay in which a CABG was performed (index stay) or in a subsequent admission. A panel of specialists in cardiothoracic surgery, cardiology, and internal medicine assisted in the identification of potentially adverse outcomes signaled by certain secondary diagnoses in the index stay, as well as diagnoses and procedures for readmissions. The conditions represented by these diagnoses or procedures are referred to as adverse events. Data on the eight adverse event groups for CABG are presented in Table 1. The individual ICD-9-CM codes comprising each group, whether an appearance of the code during the index stay was counted as an adverse event, the time period after discharge during which a readmission with the listed code was counted as an adverse event, and the rate of occurrence of each code are given.

For CABG, the eight adverse event groups are:

1. Angina, acute myocardial infarction (AMI), and other acute and subacute ischemic heart disease.
2. Other cardiac events, a category that includes dysrhythmias and heart failure.
3. Noncardiac vascular events, a category that includes pulmonary embolism, stroke, and phlebitis.
4. Infections.
5. Cardiac catheterization without revascularization.
6. Subsequent PTCA.
7. Subsequent CABG.
8. Other events.

As noted in the introduction, Medicare claims files for hospital stays contain up to five diagnosis codes and three procedure codes. For this study, all five diagnosis positions and all three procedure codes were used in counting events that occurred during the index stay. However, for readmissions, all procedure positions but only the principal diagnosis were considered.

In the index stay, 387.02 events were identified per 1,000 procedures. The total rate

NOTE: For coronary artery bypass graft, records of hospital stays with DRG code 106 or 107 were selected.

of readmissions for potentially adverse events was 283.31 per 1,000 persons discharged alive.

Event Group 1, angina, AMI, and other acute and subacute ischemic heart disease, includes rehospitalizations for conditions that may have been indications for the original CABG procedure. The rate of rehospitalizations for Event Group 1 was 50.12 per 1,000 persons discharged alive. Within Group 1, the most common principal diagnosis on readmission was other acute and subacute forms of ischemic heart disease (28.18 readmissions per 1,000 discharged alive); next were angina pectoris (11.86) and AMI (10.08).

Event Group 2, other cardiac events, had a rate of 157.85 events in the index stay per 1,000 CABG procedures. By far the most common diagnosis in the index stay in this group was cardiac complications during or resulting from a procedure, with a rate of 141.13 events per 1,000 procedures. The rate of readmissions for Event Group 2 was 129.86 per 1,000 live discharges. The most common reasons for readmission were heart failure (67.65 per 1,000) and cardiac dysrhythmias (39.64).

The rates of events in the index stay and of readmissions in Group 3, noncardiac vascular events, were small. Overall, there were 7.17 events in the index stay per 1,000 CABGs; peripheral vascular complications accounted for the vast majority (6.07). There were 18.61 readmissions for Group 3 events per 1,000 live discharges. In this group, the leading reason for readmission was arterial embolism and thrombosis, accounting for 5.74 readmissions per 1,000 persons discharged alive.

Diagnoses indicating infections (Event Group 4) during the index stay occurred at a rate of 103.45 per 1,000 CABG procedures. The most common single diagnosis was respiratory complications, appearing at a rate of 72.90 per 1,000 procedures. The rate of readmissions for Event Group 4 was small (23.19 readmissions per 1,000 persons discharged alive), and the most common principal diagnosis in this group was postoperative infection (10.00 readmissions per 1,000 live discharges).

Event Group 5 consists of readmissions for cardiac catheterization without revascularization (i.e., without CABG or PTCA). All readmissions during which a cardiac catheterization without revascularization was performed were counted in this group, regardless of the principal diagnosis of the readmission. There were 29.11 readmissions for cardiac catheterization within the year following CABG per 1,000 persons discharged alive.

Event Group 6 consists of readmissions in which a PTCA was performed. There were 7.54 such readmissions within the year following CABG

per 1,000 persons discharged alive. Event Group 7 consists of repeat CABG operations within a year after the index CABG. Only 3.06 such readmissions occurred per 1,000 CABG operations. A multiyear followup period would be appropriate to track the incidence of subsequent CABG or PTCA operations but was not feasible for this analysis.

Finally, Event Group 8, other events, includes a variety of conditions occurring during index stays and readmissions. Such diagnoses occurred 118.55 times during the index stay per 1,000 CABG procedures. The leading diagnoses were hemorrhage or hematoma complicating a procedure (47.32 per 1,000) and other specified complications of procedures, not elsewhere classified (16.94 per 1,000). There were 21.82 readmissions in this event group. The leading reason for readmission was unspecified pleural effusion, with a rate of 9.47 readmissions per 1,000 live discharges.

Patterns by age, sex, and race

Table 2 contains information on rates of CABG, average length of stay (ALOS), and outcomes following CABG for all patients combined and by age, sex, and race. The rate of CABG during the 9-month study period was 2.01 per 1,000 aged enrollees. Of every 1,000 persons undergoing a CABG, 308 (about 31 percent) experienced at least one adverse event during the initial hospital stay. Of the 53,715 persons with a CABG, 50,676, or 94.3 percent, were discharged alive and 5.7 percent died in the hospital during the index stay. The death rate for CABG patients within a year after surgery was 97 per 1,000, or nearly 10 percent. Approximately 60 percent of the deaths within a year occurred during the index stay.

The rate of persons with one readmission or more for any cause (i.e., not just the reasons we defined as events) within 90 days of discharge is also shown in Table 2. This rate was 234 per 1,000 live discharges. The number of persons with one readmission or more in which the procedure or principal diagnosis was in one of the event groups was 202 per 1,000 persons discharged alive.

As noted in Volume 2, among Medicare enrollees 65 years of age or over, 1986 rates of CABG declined sharply with age, were more than three times as great for men as for women, and were much lower for black persons than for white persons. Because of the small number of CABG operations performed on black enrollees during the 9-month period discussed in this volume, age- and sex-specific differences within the black patient population are not discussed. In addition, because few CABG operations (only 381) were performed

on enrollees aged 85 years or over, we will focus on the two age groups 65-74 and 75-84 years.

Overall, ALOS for CABG was 15.48 days. ALOS rose with age, from 14.85 days for patients aged 65-74 years to 17.44 days for patients aged 75-84 years.

The number of persons with one adverse event or more in the index stay per 1,000 procedures was higher for patients aged 75-84 years than for patients aged 65-74 years (329 versus 301). The rates for men and women were similar overall (310 and 302) and in the two youngest age groups. The rate of adverse events in the index stay was lower for black patients than white patients (273 versus 308).

The number of persons dying within 1 year per 1,000 procedures was 70 percent greater for patients aged 75-84 years than patients 65-74 years (141 deaths versus 83 deaths per 1,000 procedures). Overall, women had a higher death rate within a year of operation than men had (112 deaths versus 90). This was also true for the two youngest age groups. The death rate was higher for black patients than for white patients (133 deaths versus 96 per 1,000 procedures).

The number of persons with one readmission or more for any cause within 90 days increased from 222 per 1,000 live discharges for persons aged 65-74 years to 271 per 1,000 for persons aged 75-84 years. The 90-day readmission rate was greater for women than men overall and also in the two youngest age groups. The 90-day readmission rate was greater for black patients than for white patients (280 versus 233 persons per 1,000 live discharges).

The number of persons with one readmission or more with an event increased from 193 per 1,000 live discharges aged 65-74 years to 232 per 1,000 aged 75-84 years. The rate for women (238 per 1,000) was 29 percent higher than the rate for men (185 per 1,000). Black patients had a higher rate than white patients (258 versus 201).

As shown in the right side of Table 2, the total rate of readmissions for potentially adverse events also increased with age, from 272 readmissions per 1,000 persons discharged alive aged 65-74 years to 319 readmissions per 1,000 persons aged 75-84 years. The rate also increased with age for the two largest categories: Event Group 1, angina, AMI, and other acute and subacute ischemic heart disease, and Event Group 2, other cardiac events. The rate of readmissions for Event Group 5, cardiac catheterization without revascularization, decreased with age. For total events and for the two largest event groups, the readmission rate was greater for women than men and greater for black persons than white persons.

Variations by geographic area

Tables 3 and 4 contain data on adverse events following CABG by geographic area. In both tables, data are shown by U.S. census region, division, and State. Data by metropolitan and rural areas within each State are shown in Table 3, and data by metropolitan statistical area (MSA) are shown in Table 4. Figures 1 and 2 were derived from the data in these tables.

Tables 3 and 4 contain data for the same measures that are shown by age, sex, and race in Table 2. Data for areas in which the rate was significantly different from the national average are annotated with a "+" or "-" if the local rate was different at the $p = 0.05$ level and with a "++" or "--" if the local rate was different at the $p = 0.01$ level. Details on the statistical tests are contained in the appendix.

ALOS was highest in the Northeast (17.12 days) and lowest in the West (13.63 days). Rhode Island had the highest ALOS (19.72 days), and Oregon, the lowest (11.76 days).

Among the four U.S. census regions, the number of persons with one event or more during the index stay per 1,000 procedures ranged from 279 persons per 1,000 procedures in the North Central Region to 370 in the West, with intermediate rates of 286 and 329 in the South and Northeast. Among the States, the rates ranged from 160 in Mississippi and 168 in South Dakota to 500 in Hawaii and 504 in Washington. As discussed in the introduction, rates of possible adverse events in the index stay may reflect, to some degree, variations in coding completeness across areas; that is, the reporting of the actual occurrence of such events may not be fully reliable.

The number of persons dying within 1 year of CABG surgery per 1,000 procedures varied among the census regions, from 90 per 1,000 in the North Central to 103 in the South. Among States, the lowest death rates within a year after CABG per 1,000 procedures were in North Dakota (44) and Oregon (52). The highest death rates per 1,000 were in Nevada (145) and the District of Columbia (134), but these high rates were not statistically different from the national average. The States with the highest rates that were statistically different from the national average of 97 were Tennessee (120) and New Jersey (116).

The number of persons with one readmission or more for any cause within 90 days per 1,000 patients discharged alive is presented to give an idea of the magnitude of the readmission rate for any reason after CABG surgery. That rate varied from 242 persons readmitted for any cause within 90 days in the North Central Region and 238 in the

South to 216 in the West. Among States, lows of 180 and 189 were found in Oregon and the District of Columbia; however, the District of Columbia's rate was not significantly different from the national average. The highest rate, 282, was found in Louisiana.

The number of persons with one readmission or more with a potentially adverse event did not vary much by region. Rates of 206, 205, and 203 persons readmitted with an adverse event per 1,000 live discharges were found in the Northeast, North Central, and South Regions, respectively, and a low of 194 occurred in the West. By State, the lowest rates were in Wyoming (139), Iowa (149), and Oregon (156). High rates were found in the District of Columbia (284), Maine (246), and Georgia (233), but the first two rates are not statistically different from the national average.

The rate of total readmissions for adverse events per 1,000 persons discharged alive did not vary much across the four census regions. A high rate of 295 readmissions per 1,000 persons discharged alive was registered in the Northeast, and a low of 270 was found in the West. By State, the highest rates significantly different from the U.S. average were found in Alabama (325) and Georgia (333). The lowest statistically significant rate was found in Iowa (205). Figure 1 is a map of total readmissions for adverse events per 1,000 persons discharged alive. Although the geographic patterns were not pronounced, a pattern of high readmission rates in the Eastern United States and low rates in some Rocky Mountain and Plains States is evident. It is interesting that both very high and very low rates are found in adjacent States in the South.

The rate of readmissions within 1 year after CABG surgery for Event Group 1, angina, AMI, and other acute and subacute ischemic heart disease, was markedly higher in the Northeast Region (61 readmissions per 1,000 persons discharged alive) than in the South (50), North Central (46), and West (44). The higher readmission rates in the Northeast are clear from the map in Figure 2 for Event Group 1. Although several States had higher readmission rates, Pennsylvania had the highest rate (73 readmissions per 1,000) that was significantly different from the U.S. average. The lowest rate statistically different from the U.S. average was found in Colorado (23 per 1,000).

The largest readmission category was Event Group 2 (other cardiac events), which, as noted earlier, includes heart failure and dysrhythmias. Again, the Northeast had the highest rate, 136 readmissions per 1,000 persons discharged

alive, and the West had the lowest rate, 118. The highest State rate statistically different from the U.S. average was 182 in Maryland; the lowest rates were in Montana (58) and Utah (62).

Rates of readmissions for Event Group 3, noncardiac vascular events, were small. No State had a rate statistically greater than the U.S. average. The smallest statistically different rate was in Maryland (6).

Similarly, rates of readmissions for Event Group 4, infections, were small. No State had a significantly high rate. The smallest statistically significant low rate was found in Connecticut (14).

Rates of readmissions for Event Group 5, cardiac catheterization without revascularization (i.e., CABG or PTCA), were also small. No State had a significantly higher rate than the U.S. average. The two States with the lowest rates significantly different from the U.S. average were Rhode Island (5) and Colorado (8).

Rates of readmissions for revascularization procedures within a year of a CABG operation, Event Groups 6 and 7, were quite small. New York (3 per 1,000 live discharges) and Maryland (1) had significantly lower than average rates of readmissions for PTCA, and significantly higher than average rates were found in Montana (25 per 1,000), Oregon (19), and Washington (15). Another CABG within a year of the initial CABG was even rarer than a subsequent PTCA. The only State with a rate significantly different from the national average of 3 readmissions for CABG per 1,000 persons discharged alive was Oregon (10).

Finally, the rate of readmissions in Event Group 8, other events, was 22 per 1,000 persons discharged alive. Montana (46) had the highest rate. Iowa had the lowest rate that was significantly different from the U.S. average (12).

Urban-rural patterns

Overall, rural counties had statistically higher rates of readmissions within 90 days for any cause than the national average, and urban counties had lower rates. Rates were 247 persons readmitted per 1,000 live discharges in rural areas and 228 in urban areas versus a national average of 234.

National readmission rates for Event Group 1, angina, AMI, and other acute and subacute ischemic heart disease, were statistically higher than average in rural counties and statistically lower in urban counties: 57 readmissions per 1,000 persons discharged alive in rural areas and 47 in urban areas versus a national average of 50.

Correlations between rates

Table 4 contains data on rates of potentially adverse events during the index stay and in readmissions by MSA. A number of correlations were performed to examine the relationship between measures across MSAs. A correlation was performed between the rate of persons with an event in the index stay and the rate of persons readmitted with an event identified as potentially adverse. The correlation was small and not significant. As mentioned earlier, differences in rates of adverse events during the index stay should be interpreted with caution because they may reflect differences in coding practices as well as differences in the actual occurrence of adverse events.

The correlation between persons dying within a year and persons readmitted with an event identified as potentially adverse was small and not significant. The correlation between persons dying within a year after CABG and readmissions for Event Group 1, angina, AMI, and other acute and subacute ischemic heart disease, was not significant.

Correlations were performed between ALOS and rates of events in the index stay and between

ALOS and rates of persons with readmissions. This was done to examine the hypothesis that areas with high ALOS might have high rates of events within the index stay because of the longer time for adverse events to appear. Areas with high ALOS might also have lower rates of readmissions because more problems would be taken care of during the index stay. For CABG, the correlations across MSAs between ALOS and rates of adverse events in the index stay were small and not significant. The correlation between ALOS and the rate of persons with a readmission within 90 days for any reason was significant but quite small (0.16), and the correlation between ALOS and the rate of persons with a readmission for an adverse event was also statistically significant but small (0.23). The positive relationship was not expected; it indicates a direct but weak relationship between ALOS in an area and the readmission rate in an area.

Reference

Feinleib, M., Havlik, R.J., Gillum, R.F., et al.: Coronary heart disease and related procedures: National Hospital Discharge Survey data. *Circulation* 79(6):I-13-I-18, June 1989.

Table 1. Coronary artery bypass graft: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986-87 index stays (Number of procedures: 53,715. Number of live discharges: 50,676. Coronary artery bypass graft must include diagnosis-related group 106 or 107. Stays are excluded if the following ICD-9-CM procedure codes are in any position: 36.01, 36.02, 37.6, 35.0-35.7, or 38.12. Stays are also excluded if the following diagnosis codes are in any position: 443.89, 443.9, or 414.1.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmis- sions within(1)		
Total	--	--	--	387.02	283.31
1. Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease(2)	--	--	--	0.00	50.12
Acute myocardial infarction	410	No	1 year	--	10.08
Other acute and subacute forms of ischemic heart disease	411	No	1 year	--	28.18
Angina pectoris	413	No	1 year	--	11.86
2. Other cardiac events(2)	--	--	--	157.85	129.86
Malignant hypertensive heart disease with congestive heart failure	402.01	No	1 year	--	0.10
Benign hypertensive heart disease with congestive heart failure	402.11	No	1 year	--	0.34
Unspecified hypertensive heart disease with congestive heart failure	402.91	No	1 year	--	1.66
Other and unspecified acute pericarditis	420.9	No	1 year	--	0.93
Other diseases of pericardium	423	No	1 year	--	2.01
Conduction disorders	426	No	1 year	--	3.37
Cardiac dysrhythmias	427	No	1 year	--	39.64
Heart failure	428	No	1 year	--	67.65
Functional disturbances following cardiac surgery	429.4	No	1 year	--	12.20
Mechanical complication of cardiac device, implant, and graft due to coronary bypass graft	996.03	Yes	1 year	16.72	0.22
Cardiac complications during or resulting from a procedure	997.1	Yes	1 year	141.13	1.76

(1) Measured from date of surgery to date of readmission.

(2) For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3) Beginning Oct. 1, 1987, procedure code 36.05 is also included.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1. Coronary artery bypass graft: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986-87 index stays
(Number of procedures: 53,715. Number of live discharges: 50,676. Coronary artery bypass graft must include diagnosis-related group 106 or 107. Stays are excluded if the following ICD-9-CM procedure codes are in any position: 36.01, 36.02, 37.6, 35.0-35.7, or 38.12. Stays are also excluded if the following diagnosis codes are in any position: 443.89, 443.9, or 414.1.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmissions within(1)		
3. Noncardiac vascular events(2)	--	--	--	7.17	18.61
Defibrination syndrome	286.6	No	30 days	--	0.02
Pulmonary embolism and infarction	415.1	No	30 days	--	3.83
Subarachnoid hemorrhage	430	No	30 days	--	0.02
Intracerebral hemorrhage	431	No	30 days	--	0.06
Other and unspecified intracranial hemorrhage	432	No	30 days	--	0.02
Occlusion and stenosis of precerebral arteries	433	No	30 days	--	0.45
Occlusion of cerebral arteries	434	No	30 days	--	2.05
Acute, but ill-defined, cerebrovascular disease	436	No	30 days	--	0.69
Other generalized ischemic cerebrovascular disease	437.1	No	30 days	--	0.08
Arterial embolism and thrombosis	444	No	1 year	--	5.74
Phlebitis and thrombophlebitis	451	No	30 days	--	0.99
Other venous embolism and thrombosis of unspecified site	453.9	No	30 days	--	0.02
Hypotension	458	No	1 year	--	3.04
Peripheral vascular complications	997.2	Yes	1 year	6.07	1.58
Other vascular complications	999.2	Yes	30 days	1.10	0.02

(1) Measured from date of surgery to date of readmission.

(2) For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3) Beginning Oct. 1, 1987, procedure code 36.05 is also included.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1. Coronary artery bypass graft: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986-87 index stays
(Number of procedures: 53,715. Number of live discharges: 50,676. Coronary artery bypass graft must include diagnosis-related group 106 or 107. Stays are excluded if the following ICD-9-CM procedure codes are in any position: 36.01, 36.02, 37.6, 35.0-35.7, or 38.12. Stays are also excluded if the following diagnosis codes are in any position: 443.89, 443.9, or 414.1.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmissions within(1)		
4. Infections(2)	--	--	--	103.45	23.19
Septicemia	038	No	60 days	--	1.42
Viral hepatitis B with hepatic coma	070.2	No	1 year	--	0.00
Viral hepatitis B without mention of hepatic coma	070.3	No	1 year	--	0.41
Other specified viral hepatitis with hepatic coma	070.4	No	1 year	--	0.00
Other specified viral hepatitis without mention of hepatic coma	070.5	No	1 year	--	0.12
Unspecified viral hepatitis with hepatic coma	070.6	No	1 year	--	0.00
Unspecified viral hepatitis without mention of hepatic coma	070.9	No	1 year	--	0.08
Acute bronchitis and bronchiolitis	466	No	30 days	--	0.51
Pneumococcal pneumonia	481	No	30 days	--	0.14
Other bacterial pneumonia	482	No	30 days	--	0.45
Bronchopneumonia, organism unspecified	485	No	30 days	--	0.12
Pneumonia, organism unspecified	486	No	30 days	--	2.11
Hepatitis, unspecified	573.3	No	1 year	--	0.39
Acute pyelonephritis	590.1	No	30 days	--	0.14
Other pyelonephritis or pyonephrosis, not specified as acute or chronic	590.8	No	30 days	--	0.06
Infection of kidney, unspecified	590.9	No	30 days	--	0.00
Acute cystitis	595.0	No	30 days	--	0.00
Cystitis, unspecified	595.9	No	30 days	--	0.06
Urinary tract infection, site not specified	599.0	No	30 days	--	0.95
Other cellulitis and abscess, neck	682.1	No	30 days	--	0.00
Other cellulitis and abscess, trunk	682.2	No	30 days	--	0.00
Other cellulitis and abscess, leg, except foot	682.6	No	30 days	--	1.20
Other cellulitis and abscess, unspecified site	682.9	No	30 days	--	0.00
Bacteremia, unspecified	790.7	No	30 days	--	0.02
Infection and inflammatory reaction due to internal prosthetic device, implant, and graft	996.6	Yes	1 year	1.68	1.62
Respiratory complications	997.3	Yes	30 days	72.90	1.52
Disruption of operation wound	998.3	Yes	30 days	8.95	1.84
Postoperative infection	998.5	Yes	60 days	19.45	10.00
Other infection	999.3	Yes	30 days	0.47	0.02

(1)Measured from date of surgery to date of readmission.

(2)For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3)Beginning Oct. 1, 1987, procedure code 36.05 is also included.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1. Coronary artery bypass graft: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986-87 index stays
(Number of procedures: 53,715. Number of live discharges: 50,676. Coronary artery bypass graft must include diagnosis-related group 106 or 107. Stays are excluded if the following ICD-9-CM procedure codes are in any position: 36.01, 36.02, 37.6, 35.0-35.7, or 38.12. Stays are also excluded if the following diagnosis codes are in any position: 443.89, 443.9, or 414.1.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmissions within(1)		
5. Cardiac catheterization without revascularization	--	--	--	--	--
Cardiac catheterization without revascularization	37.21-37.23 or 88.52-88.58	No	1 year	--	29.11
6. Subsequent percutaneous transluminal coronary angioplasty	--	--	--	--	--
Percutaneous transluminal coronary angioplasty	36.01 or 36.02(3)	No	1 year	--	7.54
7. Subsequent coronary artery bypass graft	--	--	--	--	--
Coronary artery bypass graft	Diagnosis-related group 106 or 107	No	1 year	0.00	3.06

(1) Measured from date of surgery to date of readmission.

(2) For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3) Beginning Oct. 1, 1987, procedure code 36.05 is also included.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1. Coronary artery bypass graft: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986-87 index stays
(Number of procedures: 53,715. Number of live discharges: 50,676. Coronary artery bypass graft must include diagnosis-related group 106 or 107. Stays are excluded if the following ICD-9-CM procedure codes are in any position: 36.01, 36.02, 37.6, 35.0-35.7, or 38.12. Stays are also excluded if the following diagnosis codes are in any position: 443.89, 443.9, or 414.1.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmissions within(1)		
8. Other events(2)	--	--	--	118.55	21.82
Disorders of fluid, electrolyte, and acid-base balance	276	No	30 days	--	2.29
Iron deficiency anemias	280	No	30 days	--	0.14
Other and unspecified anemias	285	No	30 days	--	0.34
Unspecified transient organic mental disorder	293.9	No	1 year	--	0.04
Anoxic brain damage	348.1	No	30 days	--	0.08
Bronchitis, not specified as acute or chronic	490	No	30 days	--	0.14
Chronic bronchitis	491	No	30 days	--	0.04
Emphysema	492	No	30 days	--	0.08
Asthma	493	No	30 days	--	0.22
Bronchiectasis	494	No	30 days	--	0.00
Unspecified pleural effusion	511.9	No	1 year	--	9.47
Acute edema of lung, unspecified	518.4	No	30 days	--	0.14
Pulmonary insufficiency following trauma and surgery	518.5	No	30 days	--	0.12
Respiratory failure	518.81	No	30 days	--	0.00
Acute gastric ulcer with hemorrhage	531.0	No	30 days	--	0.16
Acute gastric ulcer with perforation	531.1	No	30 days	--	0.02
Acute gastric ulcer with hemorrhage and perforation	531.2	No	30 days	--	0.02
Chronic or unspecified gastric ulcer with hemorrhage	531.4	No	30 days	--	0.32
Chronic or unspecified gastric ulcer with perforation	531.5	No	30 days	--	0.00
Chronic or unspecified gastric ulcer with hemorrhage and perforation	531.6	No	30 days	--	0.02
Acute duodenal ulcer with hemorrhage	532.0	No	30 days	--	0.65
Acute duodenal ulcer with perforation	532.1	No	30 days	--	0.04
Acute duodenal ulcer with hemorrhage and perforation	532.2	No	30 days	--	0.08
Chronic or unspecified duodenal ulcer with hemorrhage	532.4	No	30 days	--	0.83
Chronic or unspecified duodenal ulcer with perforation	532.5	No	30 days	--	0.02
Chronic or unspecified duodenal ulcer with hemorrhage and perforation	532.6	No	30 days	--	0.04
Acute peptic ulcer with hemorrhage, site unspecified	533.0	No	30 days	--	0.08

(1)Measured from date of surgery to date of readmission.

(2)For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3)Beginning Oct. 1, 1987, procedure code 36.05 is also included.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1. Coronary artery bypass graft: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986-87 index stays
(Number of procedures: 53,715. Number of live discharges: 50,676. Coronary artery bypass graft must include diagnosis-related group 106 or 107. Stays are excluded if the following ICD-9-CM procedure codes are in any position: 36.01, 36.02, 37.6, 35.0-35.7, or 38.12. Stays are also excluded if the following diagnosis codes are in any position: 443.89, 443.9, or 414.1.)

Event	ICD-9-CM code	Included if occurs in: Index stay	Readmissions within(1)	Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
Acute peptic ulcer with perforation, site unspecified	533.1	No	30 days	--	0.02
Acute peptic ulcer with hemorrhage and perforation, site unspecified	533.2	No	30 days	--	0.00
Chronic or unspecified peptic ulcer with hemorrhage, site unspecified	533.4	No	30 days	--	0.04
Chronic or unspecified peptic ulcer with perforation, site unspecified	533.5	No	30 days	--	0.00
Chronic or unspecified peptic ulcer with hemorrhage and perforation, site unspecified	533.6	No	30 days	--	0.00
Acute gastrojejunal ulcer with hemorrhage	534.0	No	30 days	--	0.00
Acute gastrojejunal ulcer with perforation	534.1	No	30 days	--	0.00
Acute gastrojejunal ulcer with hemorrhage and perforation	534.2	No	30 days	--	0.00
Chronic or unspecified gastrojejunal ulcer with hemorrhage	534.4	No	30 days	--	0.00
Chronic or unspecified gastrojejunal ulcer with perforation	534.5	No	30 days	--	0.00
Chronic or unspecified gastrojejunal ulcer with hemorrhage and perforation	534.6	No	30 days	--	0.00
Other impaction of intestine	560.39	No	30 days	--	0.30
Acute and subacute necrosis of liver	570	No	1 year	--	0.16
Acute renal failure	584	No	30 days	--	0.26
Renal failure, unspecified	586	No	30 days	--	0.10
Trigonitis	595.3	No	30 days	--	0.00
Decubitus ulcer	707.0	No	30 days	--	0.08
Shock without mention of trauma	785.5	No	1 year	--	0.43
Retention of urine	788.2	No	30 days	--	0.34
Incontinence of urine	788.3	No	30 days	--	0.00
Respiratory arrest	799.1	No	30 days	--	0.12
Other complications of internal prosthetic device, implant, and graft	996.7	Yes	1 year	15.53	1.85
Central nervous system complications during or resulting from a procedure	997.0	Yes	1 year	11.15	0.04
Gastrointestinal complications	997.4	Yes	30 days	5.72	0.16
Urinary complications	997.5	Yes	30 days	13.16	0.10
Postoperative shock	998.0	Yes	30 days	1.79	0.00

(1) Measured from date of surgery to date of readmission.

(2) For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3) Beginning Oct. 1, 1987, procedure code 36.05 is also included.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1. Coronary artery bypass graft: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986-87 index stays
(Number of procedures: 53,715. Number of live discharges: 50,676. Coronary artery bypass graft must include diagnosis-related group 106 or 107. Stays are excluded if the following ICD-9-CM procedure codes are in any position: 36.01, 36.02, 37.6, 35.0-35.7, or 38.12. Stays are also excluded if the following diagnosis codes are in any position: 443.89, 443.9, or 414.1.)

Event	ICD-9-CM code	Included if occurs in: Index stay	Readmis- sions within(1)	Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
Hemorrhage or hematoma complicating a procedure	998.1	Yes	30 days	47.32	0.65
Accidental puncture or laceration during a procedure	998.2	Yes	30 days	4.82	0.04
Foreign body accidentally left during a procedure	998.4	Yes	1 year	0.39	0.02
Acute reaction to foreign substance accidentally left during a procedure	998.7	Yes	1 year	0.02	0.00
Other specified complications of procedures, not elsewhere classified	998.8	Yes	1 year	16.94	1.70
Unspecified complication of procedure, not elsewhere classified	998.9	Yes	30 days	0.48	0.02
Air embolism	999.1	Yes	30 days	0.11	0.00
ABO incompatibility reaction	999.6	Yes	30 days	0.06	0.04
Rh incompatibility reaction	999.7	Yes	30 days	0.00	0.00
Other transfusion reaction	999.8	Yes	30 days	1.06	0.02

(1) Measured from date of surgery to date of readmission.

(2) For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3) Beginning Oct. 1, 1987, procedure code 36.05 is also included.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986-87 index stays

Race, sex, and age	Index stay					Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures						
All persons(3)	53,715	2.01	15.48	308	97	50,676	234	202		
65-74 years	41,190	2.55	14.85	301	83	39,234	222	193		
75-84 years	12,144	1.51	17.44	329	141	11,108	271	232		
85 years or over	381	0.15	20.70	391	210	334	299	249		
Men	36,006	3.38	14.87	310	90	34,211	218	185		
65-74 years	28,520	4.04	14.33	304	78	27,296	208	178		
75-84 years	7,281	2.50	16.83	332	133	6,737	256	212		
85 years or over	205	0.30	19.55	410	249	178	320	236		
Women	17,709	1.10	16.72	302	112	16,465	265	238		
65-74 years	12,670	1.39	16.02	293	95	11,938	255	229		
75-84 years	4,863	0.95	18.34	323	154	4,371	294	263		
85 years or over	176	0.10	22.05	369	165	156	276	263		
White	50,138	2.13	15.40	308	96	47,347	233	201		
65-74 years	38,341	2.70	14.76	301	82	36,548	222	192		
75-84 years	11,439	1.60	17.39	329	139	10,484	270	232		
85 years or over	358	0.16	20.53	397	207	315	292	248		
Men	33,885	3.61	14.82	310	89	32,220	218	185		
65-74 years	26,795	4.31	14.28	303	78	25,655	208	177		
75-84 years	6,901	2.68	16.80	334	130	6,400	255	213		
85 years or over	189	0.31	19.05	413	243	165	309	230		
Women	16,253	1.15	16.60	304	110	15,127	265	238		
65-74 years	11,546	1.44	15.85	296	93	10,893	255	228		
75-84 years	4,538	1.00	18.28	322	152	4,084	293	262		
85 years or over	169	0.10	22.18	379	166	150	273	267		

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

(3) Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges										
		Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease			Noncardiac vascular events		Infections		Cardiac catheterization without revascularization	
Race, sex, and age	Total	Other cardiac events	Infec- tions	Cardiac catheter- ization without revascular- ization	Subsequent PTCA(1)	Subsequent CABG(2)	Other			
All persons(3)	283	130	19	23	29	8	3	22		
65-74 years	272	121	18	23	31	8	4	20		
75-84 years	319	158	22	25	24	7	2	28		
85 years or over	353	195	18	30	18	6	0	12		
Men	254	120	18	21	27	7	3	19		
65-74 years	246	114	18	21	27	7	3	18		
75-84 years	285	145	19	24	24	5	2	24		
85 years or over	343	185	6	34	17	6	0	17		
Women	344	149	20	27	34	9	4	27		
65-74 years	333	139	18	27	38	9	4	25		
75-84 years	373	177	26	26	24	11	1	33		
85 years or over	365	205	32	26	19	6	0	6		
White	282	130	18	23	29	7	3	22		
65-74 years	271	122	17	23	30	7	3	20		
75-84 years	318	158	21	25	24	7	2	27		
85 years or over	343	194	19	25	16	6	0	10		
Men	253	121	18	21	26	6	3	19		
65-74 years	245	114	18	21	27	7	3	18		
75-84 years	285	147	19	24	24	5	2	24		
85 years or over	315	176	6	24	18	6	0	12		
Women	343	149	19	27	34	9	4	27		
65-74 years	333	138	17	27	38	9	4	26		
75-84 years	370	176	24	26	24	11	1	33		
85 years or over	373	213	33	27	13	7	0	7		

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

(3) Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986-87 index stays

Race, sex, and age	Index stay					Number of persons discharged alive	Within 90 days for any cause	With an event
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures			
Black	1,322	0.66	18.81	273	133	1,224	280	258
65-74 years	1,043	0.86	18.23	268	113	982	264	256
75-84 years	268	0.46	20.62	287	205	233	339	270
85 years or over	11	0.06	30.09	364	273	9	556	222
Men	650	0.82	17.63	277	117	611	250	224
65-74 years	515	0.99	16.90	282	99	491	226	230
75-84 years	125	0.58	19.67	248	176	112	339	196
85 years or over	10	0.17	29.40	400	300	8	500	250
Women	672	0.56	19.96	269	149	613	310	292
65-74 years	528	0.76	19.52	256	127	491	301	281
75-84 years	143	0.39	21.45	322	231	121	339	339
85 years or over	1	0.01	37.00	0	0	1	1000	0

Number of persons with 1 readmission or more per 1,000 live discharges

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges										
Race, sex, and age	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease			Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other
		Other cardiac events								
Black	364	167	27	27	27	27	39	7	3	20
65-74 years	349	154	24	27	24	27	44	7	4	16
75-84 years	416	215	39	21	39	21	21	4	0	34
85 years or over	667	333	0	111	0	111	0	0	0	0
Men	316	136	20	28	20	28	44	7	3	15
65-74 years	314	126	22	26	22	26	51	8	4	12
75-84 years	295	161	9	27	9	27	18	0	0	27
85 years or over	750	375	0	125	0	125	0	0	0	0
Women	413	197	34	26	34	26	34	7	3	24
65-74 years	385	181	26	29	26	29	37	6	4	20
75-84 years	529	264	66	17	66	17	25	8	0	41
85 years or over	0	0	0	0	0	0	0	0	0	0

(1) Percutaneous transluminal coronary angioplasty.

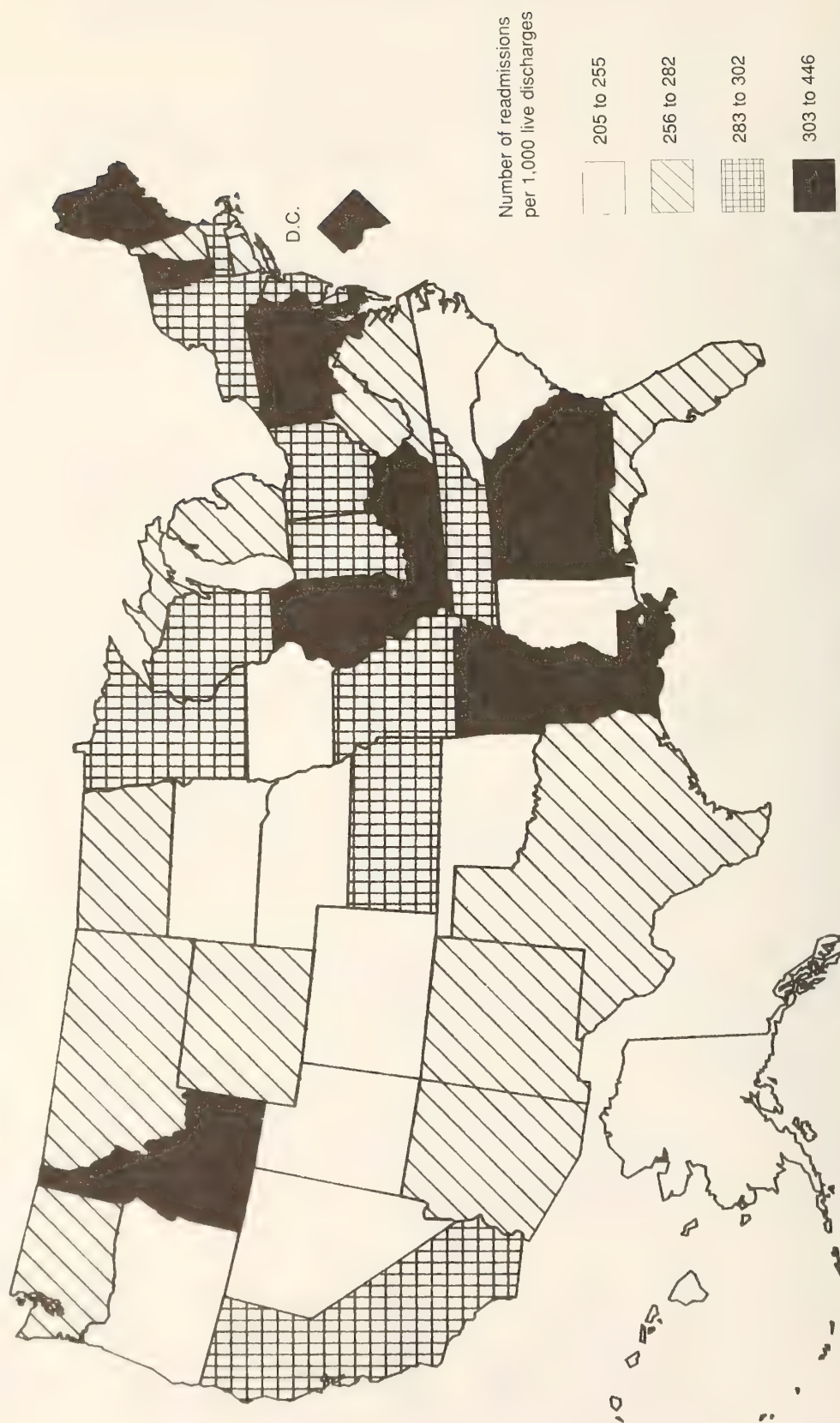
(2) Coronary artery bypass graft.

(3) Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

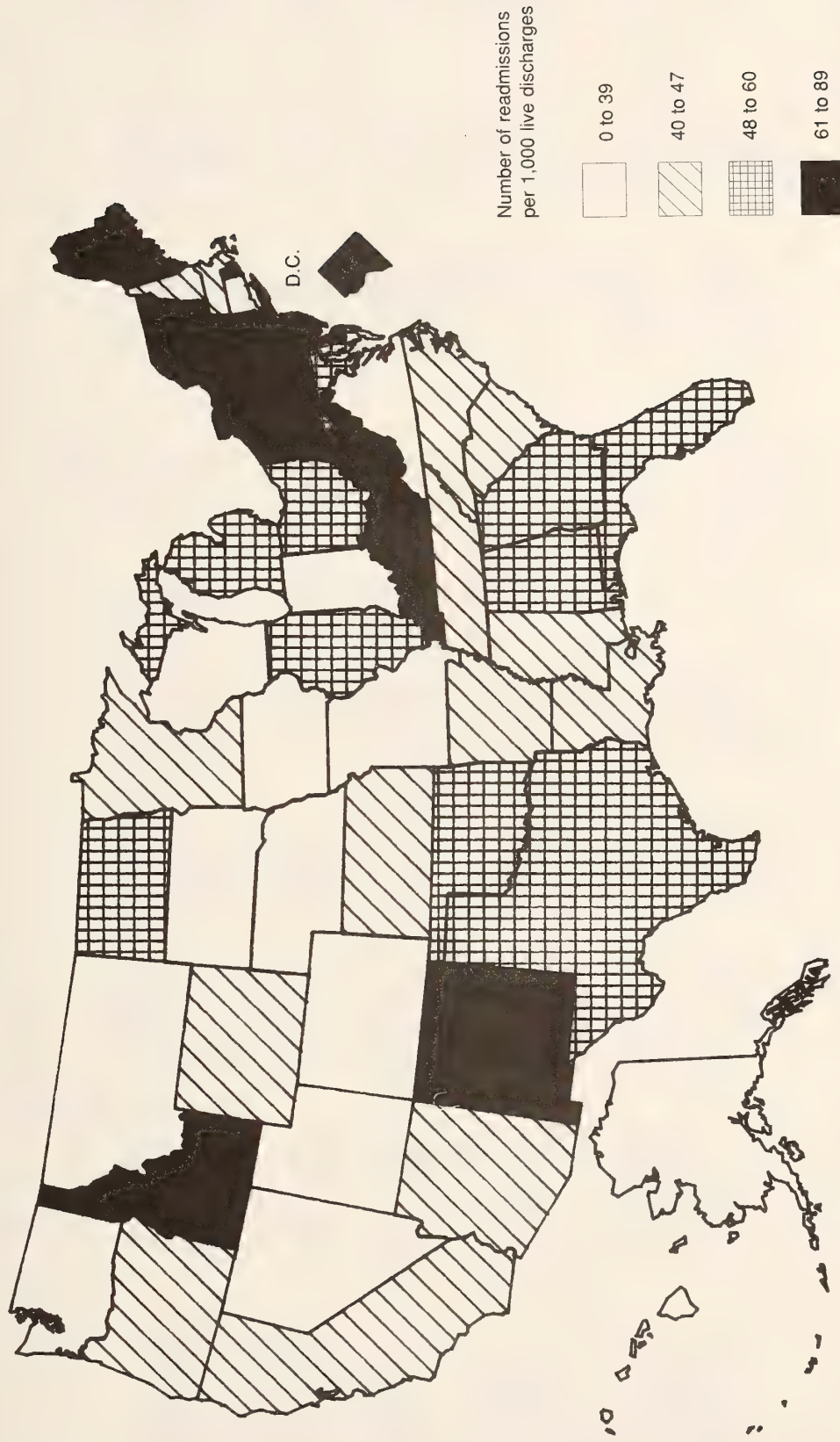
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 1. Coronary artery bypass graft: Number of readmissions with an adverse event per 1,000 live discharges for aged Medicare enrollees, by State: 1986-87 index stays



NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 2. Coronary artery bypass graft: Number of readmissions with an adverse event in Event Group 1 (angina, acute myocardial infarction, and other acute and subacute ischemic heart disease) per 1,000 live discharges for aged Medicare enrollees, by State: 1986-87 index stays



NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
United States	53,715	2.01	15.48	308	97	50,676	234	202
Metropolitan	38,808	2.00	15.75	307	98	36,542	228-	201
Rural	14,907	2.03	14.75	308	95	14,134	247++	206
Northeast	10,316	1.64--	17.12	329++	99	9,701	229	206
Metropolitan	9,183	1.65--	17.34	327++	101	8,623	226	204
Rural	1,133	1.59--	15.33	350++	85	1,078	254	222
New England	2,707	1.72--	17.74	350++	101	2,540	233	202
Metropolitan	2,338	1.74--	17.88	334++	101	2,192	230	199
Rural	369	1.63--	16.84	453++	103	348	253	221
Maine	247	1.61--	16.64	462++	97	236	246	246
Metropolitan	154	1.87	17.79	435++	97	149	235	262
Rural	93	1.31--	14.72	505++	97	87	264	218
New Hampshire	178	1.55--	14.15	360	107	171	234	193
Metropolitan	119	1.61--	14.44	370	109	114	281	228
Rural	59	1.45--	13.56	339	102	57	140-	123
Vermont	133	2.12	19.20	519++	128	123	228	195
Metropolitan	35	3.36+	20.51	371	114	32	156	125
Rural	98	1.87	18.72	571++	133	91	253	220
Massachusetts	1,095	1.54--	17.31	308	98	1,026	251	215
Metropolitan	995	1.51--	17.20	301	97	932	244	210
Rural	100	1.98	18.38	380	100	94	330+	266

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions, for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other
United States	283	50	130	19	23	29	8	3	22
Metropolitan	280	47-	130	18	23	30	8	3	21
Rural	293	57++	130	20	25	27	7	3	23
Northeast	295	61++	136	17	22	29	5--	4	22
Metropolitan	290	58++	132	17	22	29	6	4	22
Rural	342++	87++	163+	17	18	29	2-	4	23
New England	284	46	145	14	25	24	4--	4	23
Metropolitan	277	41	142	16	24	24	4-	4	23
Rural	325	75	164	6	29	23	0	6	23
Maine	360	72	178	8	25	42	4	8	21
Metropolitan	396	60	195	13	34	54	7	13	20
Rural	299	92	149	0	11	23	0	0	23
New Hampshire	257	41	158	0	12	18	0	6	23
Metropolitan	298	18	202	0	18	26	0	9	26
Rural	175	88	70	0	0	0	0	0	18
Vermont	317	89	138	0	41	24	0	16	8
Metropolitan	219	63	125	0	0	31	0	0	0
Rural	352	99	143	0	55	22	0	22	11
Massachusetts	290	47	130	19	35	25	5	1	29
Metropolitan	285	47	126	18	34	25	5	1	29
Rural	340	43	170	21	43	32	0	0	32

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3 Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures			
Rhode Island	229	1.73-	19.72	192--	109	210	257	190
Metropolitan	229	1.73-	19.72	192--	109	210	257	190
Rural	0	0.00	0.00	0	0	0	0	0
Connecticut	825	2.08	18.64	388++	98	774	199-	178
Metropolitan	806	2.10	18.61	390++	100	755	200-	175-
Rural	19	1.57	19.63	316	0	19	158	316
Middle Atlantic	7,609	1.62--	16.90	322++	99	7,161	227	208
Metropolitan	6,845	1.62--	17.16	325++	102	6,431	224	206
Rural	764	1.57--	14.60	300	76-	730	255	222
New York	3,143	1.47--	18.13	338++	91	2,973	209--	194
Metropolitan	2,801	1.46--	18.50	342++	95	2,642	204--	190
Rural	342	1.55--	15.11	301	61--	331	245	227
New Jersey	1,601	1.75--	17.62	323	116+	1,489	222	209
Metropolitan	1,601	1.75--	17.62	323	116+	1,489	222	209
Rural	0	0.00	0.00	0	0	0	0	0
Pennsylvania	2,865	1.74--	15.16	304	98	2,699	251+	222++
Metropolitan	2,443	1.77--	15.32	305	100	2,300	249	223+
Rural	422	1.59--	14.20	299	88	399	263	218

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease					Cardiac catheterization without revascularization		Subsequent PTCA(1)	Subsequent CABG(2)	Other
		Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Cardiac catheterization without revascularization					
Rhode Island	243	67	10	14	5-	5-	0	0	0	19	
Metropolitan	243	67	10	14	5-	5-	0	0	0	19	
Rural	0	0	0	0	0	0	0	0	0	0	
Connecticut	264	25--	17	14-	23	23	4	5	18		
Metropolitan	253	25--	17	15	23	23	4	5	17		
Rural	684++	0	0	0	53	53	0	0	53		
Middle Atlantic	300+	67++	17	20	30	30	6	4	22		
Metropolitan	294	64++	17	21	30	30	7	4	22		
Rural	351++	93++	22	12-	32	32	3	3	23		
New York	285	62+	14	23	31	31	3--	4	23		
Metropolitan	273	58	13-	24	29	29	3--	4	22		
Rural	384+	94+	24	9	45	45	3	3	24		
New Jersey	301	64+	13	21	28	28	7	3	24		
Metropolitan	301	64+	13	21	28	28	7	3	24		
Rural	0	0	0	0	0	0	0	0	0		
Pennsylvania	315+	73++	23	17-	31	31	9	4	21		
Metropolitan	313+	70++	24	18	33	33	10	5	21		
Rural	323	93+	20	15	20	20	3	3	23		

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Index stay							Number of persons with 1 readmission or more per 1,000 live discharges	
Area of residence	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive		Within 90 days for any cause
North Central Metropolitan Rural	14,451	2.09++	15.68	279--	90--	13,700	242+	205
	9,272	2.11++	16.06	279--	93	8,758	240	207
	5,179	2.07+	15.00	280--	86--	4,942	246+	200
East North Central Metropolitan Rural	9,909	2.09++	15.89	273--	92	9,380	243+	210+
	7,242	2.10++	16.12	275--	94	6,838	242	213+
	2,667	2.06	15.28	268--	88	2,542	247	205
Ohio Metropolitan Rural	2,699	2.14++	16.13	273--	90	2,548	241	207
	2,127	2.15++	16.26	280--	92	2,002	242	208
	572	2.07	15.67	245--	84	546	238	203
Indiana Metropolitan Rural	1,398	2.24++	17.33	240--	107	1,306	254	208
	912	2.28++	17.54	238--	111	851	247	210
	486	2.17	16.95	243--	101	455	268	202
Illinois Metropolitan Rural	2,410	1.91--	16.13	220--	91	2,292	255+	230++
	1,800	1.89--	16.66	213--	91	1,711	251	223+
	610	1.95	14.55	239--	92	581	269	253++
Michigan Metropolitan Rural	2,048	2.08	14.56	267--	84-	1,949	231	202
	1,550	2.08	14.78	260--	81-	1,472	225	203
	498	2.09	13.89	289	92	477	249	199
Wisconsin Metropolitan Rural	1,354	2.22++	15.53	409++	96	1,285	233	197
	853	2.31++	15.57	455++	109	802	247	222
	501	2.07	15.46	331	74-	483	209	155--

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease			Noncardiac vascular events	Infec-tions	Cardiac catheter-ization without revascular-ization	Subsequent PTCA(1)	Subsequent CABG(2)	Other
		Other cardiac events	Cardiac events	Other cardiac events						
North Central Metropolitan Rural	285	46	133	17	25	30	8	3	22	22
	289	46	137	16	25	32	8	3	21	21
	278	48	124	19	25	27	8	3	24	24
East North Central Metropolitan Rural	293	51	136	19	25	30	8	3	22	22
	295	51	140	17	25	31	8	3	20	20
	287	50	126	24	26	26	7	3	25	25
Ohio Metropolitan Rural	285	52	132	17	27	28	6	2	20	20
	285	49	135	14	26	29	7	3	19	19
	284	60	119	27	27	24	2	0	24	24
Indiana Metropolitan Rural	285	39	141	15	24	33	11	2	21	21
	287	42	143	12	25	33	12	1	19	19
	281	33	136	20	22	33	11	2	24	24
Illinois Metropolitan Rural	319+	56	143	24	26	35	8	4	23	23
	305	51	137	25	25	34	6	4	22	22
	360++	69	160	21	28	36	14	5	28	28
Michigan Metropolitan Rural	282	60	129	15	25	19--	7	4	23	23
	284	62	131	14	21	20--	9	4	22	22
	275	55	122	19	36	17--	2	2	23	23
Wisconsin Metropolitan Rural	286	38-	136	23	24	35	7	2	20	20
	327	44	166+	17	29	45	9	1	16	16
	219-	29-	87--	33+	17	19	4	4	27	27

(1) Percutaneous transluminal coronary angioplasty.
(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	
West North Central	4,542	2.11++	15.21	293-	86--	192
Metropolitan	2,030	2.15++	15.84	293	88	188
Rural	2,512	2.07	14.70	293	84-	195
Minnesota	726	1.83--	14.43	428++	92	195
Metropolitan	333	1.77-	15.14	453++	96	212
Rural	393	1.88	13.83	407++	89	180
Iowa	788	1.95	15.07	249-	91	149--
Metropolitan	299	2.19	15.00	237--	80	125--
Rural	489	1.83-	15.10	256-	98	163-
Missouri	1,592	2.43++	16.15	254-	80--	211
Metropolitan	926	2.42++	16.29	249--	86	206
Rural	666	2.44++	15.96	260--	71--	217
North Dakota	250	2.93++	14.55	220--	44--	193
Metropolitan	59	2.57	14.64	136--	68	55--
Rural	191	3.06++	14.52	246-	37--	233
South Dakota	208	2.16	14.50	168--	77	200
Metropolitan	40	1.96	15.30	175-	75	225
Rural	168	2.22	14.31	167--	77	194
Nebraska	373	1.78-	14.39	370+	107	159-
Metropolitan	130	1.86	15.97	408+	123	197
Rural	243	1.74-	13.54	350	99	140--

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges											
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other		
West North Central Metropolitan Rural	268	37--	126	14-	25	30	9	3	23		
	267	27--	130	14	27	34	8	2	25		
	269	45	123	15	25	27	10	3	22		
Minnesota Metropolitan Rural	294	44	137	9--	23	39	13	3	26		
	338	32	180	10	23	42	13	0	39		
	257	53	101	8	24	37	13	5	16		
Iowa Metropolitan Rural	205--	39	81--	9-	15	32	11	5	12-		
	165--	29-	65--	0-	18	29	11	4	11		
	230-	46	91-	15	13	35	11	7	13		
Missouri Metropolitan Rural	291	29--	155+	16	25	31	6	3	25		
	283	22--	148	19	24	35	4	3	27		
	301	39	163	12	28	26	8	3	22		
North Dakota Metropolitan Rural	258	53	127	16	12	20	4	4	20		
	55--	18	36	0	0	0	0	0	0		
	317	63	153	21	16	26	5	5	26		
South Dakota Metropolitan Rural	255	35	125	5	45	25	10	0	10		
	375	25	200	0	25	100	25	0	0		
	225	38	106	6	50	6	6	0	13		
Nebraska Metropolitan Rural	214-	32	78--	12	35	17	12	0	29		
	299	34	120	17	60+	26	9	0	34		
	170--	31	57--	9	22	13	13	0	26		

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Area of residence	Index stay				Number of persons with 1 readmission or more per 1,000 live discharges
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	
Kansas	605	1.97	14.88	316	569
Metropolitan	243	1.96	16.44	305	229
Rural	362	1.97	13.83	323	340
South	19,263	2.15++	15.37	286--	18,105
Metropolitan	12,611	2.19++	15.52	279--	11,842
Rural	6,652	2.06+	15.08	299	6,263
South Atlantic	9,555	2.05	15.50	308	9,007
Metropolitan	6,892	2.08++	15.66	295-	6,479
Rural	2,663	1.97	15.06	342++	2,528
Delaware	148	2.11	17.07	318	140
Metropolitan	103	2.32	17.71	350	95
Rural	45	1.74	15.62	244	45
Maryland	845	1.94	14.90	293	803
Metropolitan	769	1.95	14.82	306	729
Rural	76	1.83	15.74	171--	74
Dist. of Columbia	82	1.24--	17.70	256	74
Metropolitan	82	1.24--	17.70	256	74
Rural	0	0.00	0.00	0	0
Virginia	990	1.76--	14.96	198--	945
Metropolitan	660	1.87--	14.78	173--	633
Rural	330	1.57--	15.33	248-	312
Within 90 days for any cause					
					264
					275
					256
					238
					229
					255++
					211
					183
					229
					203
					197
					213+
					198
					194
					208
					214
					189
					267
					228
					229
					216
					284
					284
					0
					193
					182
					215

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1988-87 index stays

Number of readmissions with an event per 1,000 live discharges										
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease			Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other
		Other cardiac events	Other cardiac events	Other cardiac events						
Kansas	299	40	123	26	35	28	12	0	33	
Metropolitan	245	31	87	22	44	31	9	0	22	
Rural	335	47	147	29	29	26	15	0	41+	
South	282	50	130	20	24	29	6-	2	21	
Metropolitan	271-	45-	126	18	23	31	7	2	19-	
Rural	303+	60++	138	22	26	24-	6-	3	24	
South Atlantic	276	50	129	17	25	28	7	3	18-	
Metropolitan	269	47	124	17	24	30	8	2	17--	
Rural	296	58	143	19	26	22-	4-	3	21	
Delaware	293	71	121	21	14	50	7	0	7	
Metropolitan	232	63	116	21	11	11	0	0	11	
Rural	422	89	133	22	22	133++	22	0	0	
Maryland	328	55	182++	6--	29	25	1-	4	26	
Metropolitan	328	59	178++	7--	27	23	1	4	27	
Rural	324	14	216	0	41	41	0	0	14	
Dist. of Columbia	446	81	189	14	68	68	14	0	14	
Metropolitan	446	81	189	14	68	68	14	0	14	
Rural	0	0	0	0	0	0	0	0	0	
Virginia	272	38	141	23	28	18-	8	2	14-	
Metropolitan	254	22--	134	27	30	16-	9	2	14	
Rural	308	71	154	16	22	22	6	3	13	

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	
West Virginia	442	1.81-	16.85	337	120	189
Metropolitan	179	1.97	16.25	296	106	135--
Rural	263	1.71--	17.26	365	129	226
North Carolina	1,307	1.90-	16.22	392++	92	188
Metropolitan	678	1.95	16.34	372++	94	183
Rural	629	1.84-	16.09	413++	89	193
South Carolina	667	2.03	15.40	265-	91	178
Metropolitan	399	2.14	15.99	226--	88	184
Rural	268	1.89	14.52	325	97	169
Georgia	1,218	2.17+	13.59	281-	97	233+
Metropolitan	637	2.03	13.96	251--	104	225
Rural	581	2.34++	13.19	313	90	241+
Florida	3,856	2.26++	15.88	324+	100	188-
Metropolitan	3,385	2.24++	16.03	316	101	188-
Rural	471	2.47++	14.74	384++	96	189
East South Central	3,968	2.30++	15.18	247--	107+	207
Metropolitan	2,117	2.42++	14.96	250--	103	192
Rural	1,851	2.17++	15.43	243--	112+	224+
Kentucky	839	1.99	16.14	344+	117	229
Metropolitan	362	1.98	15.43	287	119	211
Rural	477	1.99	16.68	388++	115	242+

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges										
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other	
West Virginia Metropolitan Rural	257	63	114	22	15	19	2	0	22	
	176--	59	47--	24	29	12	0	0	6	
	313	66	160	21	4-	25	4	0	33	
North Carolina Metropolitan Rural	248-	42	121	18	23	23	6	2	13--	
	238-	39	108	19	20	33	9	2	8--	
	258	45	134	17	25	12--	3	3	18	
South Carolina Metropolitan Rural	244	44	105	17	27	22	9	3	16	
	241	29-	118	18	18	21	13	5	18	
	247	67	86-	16	39	24	4	0	12	
Georgia Metropolitan Rural	333+	52	161+	17	30	35	7	3	28	
	311	34-	155	8--	24	49+	10	5	27	
	357+	72	168	25	36	20	4	2	29	
Florida Metropolitan Rural	262-	51	113--	18	23	31	7	2	16-	
	261-	53	111--	18	23	32	8	2	15--	
	267	42	127	20	20	22	4	7	24	
East South Central Metropolitan Rural	295	53	136	19	23	30	5-	2	26	
	269	45	130	14	20	30	8	2	21	
	324+	62	143	25	27	31	2--	3	31+	
Kentucky Metropolitan Rural	315	63	140	22	33	32	3	4	19	
	282	50	148	21	36	9-	6	3	9	
	341	72	135	22	31	49	0	4	27	

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3 Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures					
Tennessee	1,327	2.41++	16.05	196--	120+	1,231	247	202		
Metropolitan	824	2.41++	15.79	206--	112	770	239	187		
Rural	503	2.41++	16.46	179--	133+	461	260	228		
Alabama	1,241	2.68++	14.05	275--	91	1,185	260+	214		
Metropolitan	778	2.76++	13.93	283	90	740	246	204		
Rural	463	2.56++	14.24	261-	93	445	283+	231		
Mississippi	561	1.93	14.19	160--	100	527	254	167-		
Metropolitan	153	2.31	14.54	235-	85	147	190	109--		
Rural	408	1.82-	14.06	132--	105	380	279+	189		
West South Central	5,740	2.22++	15.28	276--	111++	5,372	242	207		
Metropolitan	3,602	2.29++	15.57	266--	109+	3,369	235	205		
Rural	2,138	2.11+	14.80	295	113+	2,003	255+	211		
Arkansas	888	2.76++	14.45	289	114	839	261	226		
Metropolitan	301	2.98++	15.35	296	110	284	254	229		
Rural	587	2.66++	13.99	286	116	555	265	225		
Louisiana	845	2.03	15.95	258--	111	792	282++	226		
Metropolitan	598	2.23+	16.30	237--	104	564	277+	220		
Rural	247	1.67--	15.11	308	130	228	294+	241		
Oklahoma	842	2.22++	15.21	227--	93	795	218	177		
Metropolitan	428	2.38++	15.41	196--	89	403	189-	169		
Rural	414	2.08	15.01	258-	97	392	247	186		

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease											
Area of residence	Total	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other			
Tennessee	285	44	18	20	29	3	2	28			
Metropolitan	260	35-	12	17	32	5	1	23			
Rural	328	59	28	26	24	0	2	35			
Alabama	325+	60	18	20	36	8	3	30			
Metropolitan	295	51	15	19	38	9	3	24			
Rural	375++	74	22	22	34	4	4	38+			
Mississippi	220--	46	23	23	17-	6	0	23			
Metropolitan	163--	54	7	7	20	14	0	20			
Rural	242	42	29	29	16	3	0	24			
West South Central	283	49	23+	23	29	7	2	21			
Metropolitan	277	42-	23	22	33	4--	3	21			
Rural	294	61	23	23	21-	10	2	22			
Arkansas	316	45	30	21	26	5	1	30			
Metropolitan	327	46	35	32	32	4	0	32			
Rural	310	45	27	16	23	5	2	29			
Louisiana	321	47	30	20	32	11	3	34			
Metropolitan	296	30-	27	25	34	7	4	35			
Rural	382+	88	39	9	26	22	0	31			
Oklahoma	231--	54	13	26	19-	5	1	13-			
Metropolitan	221-	35	15	20	30	0	2	12			
Rural	242	74	10	33	8--	10	0	13			

(1) Percutaneous transluminal coronary angioplasty.
(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
Texas	3,165	2.16++	15.36	291-	114++	2,946	233	204
Metropolitan	2,275	2.23++	15.44	282--	114+	2,118	230	204
Rural	890	1.99	15.15	313	115	828	240	204
West	9,685	2.13++	13.63	370++	94	9,170	215--	194-
Metropolitan	7,742	2.13++	13.88	364++	95	7,319	215--	195
Rural	1,943	2.17++	12.65	390++	91	1,851	220	190
Mountain	2,420	2.02	14.30	369++	98	2,287	225	187
Metropolitan	1,456	2.02	15.16	372++	98	1,367	220	181-
Rural	964	2.01	13.01	366++	96	920	233	196
Montana	257	2.64++	13.57	315	109	241	266	195
Metropolitan	53	2.50	16.47	358	113	48	375+	250
Rural	204	2.68++	12.82	304	108	193	238	181
Idaho	260	2.37+	12.48	458++	92	249	213	213
Metropolitan	42	2.27	11.95	405	48	40	175	125
Rural	218	2.39+	12.58	468++	101	209	220	230
Wyoming	118	2.78++	12.65	280	93	115	278	139-
Metropolitan	43	3.51++	15.47	326	163	41	268	98
Rural	75	2.49	11.04	253	53	74	284	162
Colorado	410	1.54--	14.33	305	95	387	207	181
Metropolitan	311	1.54--	14.53	293	103	291	213	192
Rural	99	1.52--	13.71	343	71	96	188	146

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease												
Area of residence	Total	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other				
Texas Metropolitan Rural	277	124	22	23	31	6	3	18				
	275	128	23	21	34	5	3	17				
	283	114	22	28	25	11	4	21				
West Metropolitan Rural	270-	118--	21	20	29	11++	4	23				
	271	123	21	19-	28	11+	4	24				
	267	100--	18	25	34	13	3	19				
Mountain Metropolitan Rural	255-	97--	19	23	31	9	4	28				
	246-	99--	22	20	29	11	4	28				
	268	93--	15	27	35	5	3	28				
Montana Metropolitan Rural	261	58--	12	29	54	25+	0	46+				
	313	63	21	42	21	83++	0	63				
	249	57--	10	26	62+	10	0	41				
Idaho Metropolitan Rural	305	100	12	20	36	12	8	28				
	200	25	0	25	50	75++	0	0				
	325	115	14	19	33	0	10	33				
Wyoming Metropolitan Rural	278	139	9	35	17	9	0	26				
	317	244	24	0	24	0	0	24				
	257	81	0	54	14	14	0	27				
Colorado Metropolitan Rural	233	93-	23	34	8--	8	5	39				
	247	110	27	31	10	3	7	38				
	188	42--	10	42	0	21	0	42				

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Index stay							Number of persons with 1 readmission or more per 1,000 live discharges	
Area of residence	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive		Within 90 days for any cause
New Mexico Metropolitan Rural	188 71 117	1.50-- 1.38-- 1.59--	14.22 15.31 13.56	351 352 350	117 127 111	174 64 110	213 188 227	195 156 218
Arizona Metropolitan Rural	709 566 143	2.03 2.19+ 1.57--	15.61 15.78 14.92	429++ 438++ 392+	86 87 84	671 535 136	231 224 257	192 193 191
Utah Metropolitan Rural	305 216 89	2.37++ 2.31 2.52	12.60 13.03 11.55	387++ 403++ 348	85 79 101	291 206 85	199 189 224	172 150- 224
Nevada Metropolitan Rural	173 154 19	2.11 2.39+ 1.09--	16.90 17.38 13.05	277 260 421	145 136 211	159 142 17	226 225 235	182 190 118
Pacific Metropolitan Rural	7,265 6,286 979	2.18++ 2.15++ 2.35++	13.41 13.58 12.30	370++ 363++ 414++	93 94 86	6,883 5,952 931	213-- 214-- 207-	196 198 185
Washington Metropolitan Rural	1,291 974 317	2.80++ 2.81++ 2.76++	11.91 11.91 11.90	504++ 507++ 495++	86 82 98	1,227 930 297	203-- 204- 199	192 199 168
Oregon Metropolitan Rural	639 356 283	2.10 1.96 2.32+	11.76 11.94 11.53	438++ 441++ 435++	52-- 59-- 42--	622 348 274	180-- 170-- 193	156-- 149-- 164

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other
New Mexico Metropolitan Rural	264 266 264	69 78 64	92 94 91	0 0 0	29 16 36	34 31 36	0 0 0	6 16 0	34 31 36
Arizona Metropolitan Rural	258 250 287	45 43 51	113 101 162	22 26 7	21 21 22	31 30 37	3 4 0	1 2 0	21 24 7
Utah Metropolitan Rural	230 209- 282	38 29 59	62-- 49-- 94	31 10 82++	10 15 0	48 53 35	10 15 0	10 10 12	21 29 0
Nevada Metropolitan Rural	226 239 118	25 28 0	126 134 59	25 28 0	6 0 59	19 21 0	13 14 0	0 0 0	13 14 0
Pacific Metropolitan Rural	275 277 265	43- 43- 46	126 129 107	21 21 21	19- 19- 24	29 28 33	12++ 10+ 20++	3 4 3	22 23 10--
Washington Metropolitan Rural	269 290 202--	33-- 32-- 37	116 132 64--	19 20 13	18 14- 30	29 32 20	15++ 13 24+	2 3 0	36+ 43++ 13
Oregon Metropolitan Rural	235- 201-- 277	43 14-- 80	95- 86- 106	16 14 18	14 14 15	24 23 26	19++ 17 22+	10+ 9 11	13 23 0--

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
California	5,158	2.08+	13.96	323+	99	4,867	219-	203
Metropolitan	4,820	2.07	14.00	323+	99	4,547	219-	203
Rural	338	2.30+	13.41	322	107	320	222	209
Alaska	25	1.53	12.04	400	80	25	280	160
Metropolitan	13	2.31	13.92	462	0	13	308	154
Rural	12	1.12--	10.00	333	167	12	250	167
Hawaii	152	1.89	14.78	500++	112	142	218	169
Metropolitan	123	2.13	15.40	520++	114	114	211	140-
Rural	29	1.29--	12.14	414	103	28	250	286

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges									
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other
California	284	47	133	22	21	29	10	3	19
Metropolitan	282	48	132	21	20	28	9	3	20
Rural	303	28-	141	34	22	50	16	0	13
Alaska	240	0	120	40	0	40	40	0	0
Metropolitan	231	0	77	77	0	77	0	0	0
Rural	250	0	167	0	0	0	83	0	0
Hawaii	239	21	99	35	21	28	14	7	14
Metropolitan	202	18	79	44	9	18	18	9	9
Rural	393	36	179	0	71	71	0	0	36

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
United States	53,715	2.01	15.48	308	97	50,676	234	202
Northeast	10,316	1.64--	17.12	329++	99	9,701	229	206
New England	2,707	1.72--	17.74	350++	101	2,540	233	202
Maine	247	1.61--	16.64	462++	97	236	246	246
Bangor	28	1.75	15.82	357	179	26	308	346
Lewiston-Auburn	33	2.45	17.85	606++	61	33	182	152
Portland	93	1.76	18.37	398	86	90	233	278
New Hampshire	178	1.55--	14.15	360	107	171	234	193
Manchester	71	1.60--	14.34	394	99	69	275	217
Portsmouth	48	1.61	14.58	333	125	45	289	244
Vermont	133	2.12	19.20	519++	128	123	228	195
Burlington	35	3.36+	20.51	371	114	32	156	125
Massachusetts	1,095	1.54--	17.31	308	98	1,026	251	215
Boston	674	1.57--	18.02	285	98	632	233	198
New Bedford	102	1.56--	17.75	255	118	94	213	191
Pittsfield	17	0.84--	14.41	294	59	16	250	188
Springfield	91	1.26--	14.12	440+	110	84	238	202
Worcester	111	1.56--	14.66	324	72	106	340+	311+
Rhode Island	229	1.73-	19.72	192--	109	210	257	190
Providence	229	1.73-	19.72	192--	109	210	257	190

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease						Cardiac catheterization without revascularization			Subsequent CABG(2)		Other
		Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)						
United States	283	50	19	23	29	8	3						22
Northeast	295	61++	17	22	29	5--	4						22
New England	284	46	14	25	24	4--	4						23
Maine	360	72	8	25	42	4	8						21
Bangor	538+	115	0	0	77	0	38						38
Lewiston-Auburn	182	0	0	30	0	0	0						30
Portland	433	67	22	44	67	11	11						11
New Hampshire	257	41	0	12	18	0	6						23
Manchester	304	14	0	29	14	0	14						29
Portsmouth	289	22	0	0	44	0	0						22
Vermont	317	89	0	41	24	0	16						8
Burlington	219	63	0	0	31	0	0						0
Massachusetts	290	47	19	35	25	5	1						29
Boston	263	38	19	27	25	2	0						30
New Bedford	298	85	21	53	21	0	0						21
Pittsfield	313	0	0	0	63	63	0						125
Springfield	345	60	36	24	0	36	12						0
Worcester	358	66	0	75++	38	0	0						38
Rhode Island	243	67	10	14	5-	0	0						19
Providence	243	67	10	14	5-	0	0						19

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures			
Connecticut	825	2.08	18.64	388++	98	774	199--	178
Bridgeport	179	1.85	16.35	352	78	171	193	181
Hartford	376	2.39++	20.86	364+	88	354	198	164--
New Haven	203	1.97	17.44	488++	138	185	222	200
New London	48	1.74	14.44	313	125	45	156	133
Middle Atlantic	7,609	1.62--	16.90	322++	99	7,161	227	208
New York	3,143	1.47--	18.13	338++	91	2,973	209--	194
Albany	161	1.40--	12.39	193--	75	157	191	140--
Binghamton	46	1.29--	10.91	152--	65	44	250	159
Buffalo	186	1.38--	16.82	285	108	173	179	168
Elmira	19	1.39--	14.58	316	105	19	158	211
Glens Falls	17	1.12--	15.24	118	59	16	250	125
Nassau-Suffolk	560	1.88	17.79	384++	96	529	208	189
New York	1,256	1.26--	21.78	327	94	1,184	213	198
Niagara Falls	79	2.56	13.19	203--	127	73	178	247
Orange County	24	0.79--	16.83	208	42	23	304	348
Poughkeepsie	36	1.29--	24.58	361	56	34	265	235
Rochester	234	2.28	14.99	496++	77	223	161--	166
Syracuse	107	1.42--	13.15	505++	140	99	232	202
Utica-Rome	76	1.63--	14.49	395	132	68	162	176

(1) Percutaneous transluminal coronary angioplasty.
(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease		Cardiac catheterization without revascularization					Subsequent CABG(2)		Other	
Area of residence	Total	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other		
Connecticut	264	158	17	14-	23	4	5	18		
Bridgeport	251	99	12	29	41	6	18+	6		
Hartford	243	167	17	11	11--	3	3	14		
New Haven	270	151	22	11	22	5	0	32		
New London	267	156	22	0	44	0	0	22		
Middle Atlantic	300+	132	17	20	30	6	4	22		
New York	285	126	14	23	31	3--	4	23		
Albany	248	166	6	13	6	0	0	25		
Binghamton	227	114	0	0	23	0	0	91+		
Buffalo	231	81-	12	52+	12	0	6	23		
Elmira	263	158	0	0	53	0	0	0		
Glens Falls	250	63	63	63	0	0	0	0		
Nassau-Suffolk	278	134	17	23	19	4	8	17		
New York	273	110	14	27	35	3-	4	27		
Niagara Falls	397	151	14	14	55	14	0	14		
Orange County	739++	87	87	0	130	0	0	0		
Poughkeepsie	265	147	0	29	0	0	0	59		
Rochester	238	126	9	9	31	4	0	4		
Syracuse	253	111	0	20	40	0	0	10		
Utica-Rome	294	132	0	29	29	0	0	15		

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures			
Area of residence						Number of persons discharged alive	Within 90 days for any cause	With an event
New Jersey	1,601	1.75--	17.62	323	116+	1,489	222	209
Atlantic City	97	2.09	16.97	330	144	88	205	193
Bergen-Passaic	346	2.02	18.68	350	130	320	222	228
Jersey City	90	1.40--	22.97	422+	156	83	277	229
Middlesex	168	1.85	16.47	345	131	158	241	190
Monmouth-Ocean	239	1.55--	16.71	276	130	219	242	187
Newark	369	1.74--	16.09	341	73	351	211	202
Trenton	53	1.38--	18.42	415	170	47	319	319
Vineland	24	1.47	16.63	375	167	21	190	333
Pennsylvania	2,865	1.74--	15.16	304	98	2,699	251+	222++
Allentown	197	2.08	13.92	350	81	194	211	170
Altoona	19	0.92--	13.79	263	53	18	278	222
Beaver County	27	0.98--	16.19	407	37	26	192	154
Erie	60	1.70	14.52	250	150	53	208	94--
Harrisburg	177	2.43+	13.54	333	85	168	232	190
Johnstown	33	0.82--	18.15	212	30	32	281	313
Lancaster	141	2.93++	12.72	518++	85	136	235	206
Philadelphia	1,000	1.76--	17.57	276--	115	920	250	236+
Pittsburgh	448	1.38--	16.07	281	94	426	246	239
Reading	114	2.35	13.97	193--	61	109	174	183
Scranton	281	2.29+	13.75	338	89	265	200	196
Sharon	27	1.42--	17.04	222	148	25	440	360
State College	19	1.89	13.16	263	53	19	421	263
Williamsport	38	2.25	10.47	158--	53	38	368	263
York	65	1.34--	12.23	215	138	63	333	270

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other
New Jersey	301	64+	141	13	21	28	7	3	24
Atlantic City	250	45	136	23	11	23	0	0	11
Bergen-Passaic	375+	63	213++	13	13	31	3	3	38
Jersey City	386	60	193	0	24	60	12	0	36
Middlesex	247	89	95	13	25	13	0	0	13
Monmouth-Ocean	237	55	78-	14	23	18	23	0	27
Newark	256	54	105	17	26	34	3	3	14
Trenton	468	128	170	0	64	43	21	21	21
Vineland	667++	48	476++	0	0	48	48	0	48
Pennsylvania	315+	73++	134	23	17-	31	9	4	21
Allentown	242	52	129	21	10	31	0	0	0-
Altoona	222	167	56	0	0	0	0	0	0
Beaver County	308	38	77	0	38	77	0	0	77
Erie	132--	0	75	0	38	0	0	19	0
Harrisburg	256	42	77-	12	18	30	24	12	42
Johnstown	406	250++	31	94+	0	31	0	0	0
Lancaster	272	22	103	15	37	51	29+	0	15
Philadelphia	338+	87++	149	18	18	24	12	8+	22
Pittsburgh	345	82+	138	38+	14	42	0	0	31
Reading	239	37	55--	18	18	64	18	9	18
Scranton	264	45	143	23	11	26	15	0	0--
Sharon	520	0	360+	80	0	0	0	0	80
State College	421	105	105	0	105	105	0	0	0
Williamsport	263	53	105	53	0	0	0	0	53
York	476	127+	238+	16	16	48	0	0	32

(1) Percutaneous transluminal coronary angioplasty.
(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
North Central	14,451	2.09++	15.68	279--	90--	13,700	242+	205
East North Central	9,909	2.09++	15.89	273--	92	9,380	243+	210+
Ohio	2,699	2.14++	16.13	273--	90	2,548	241	207
Akron	230	3.04++	14.42	252	91	215	247	205
Canton	122	2.35	18.34	459++	98	114	325+	254
Cincinnati	313	1.96	16.56	240--	96	297	259	239
Cleveland	527	2.17	14.91	254--	89	500	234	188
Columbus	239	1.97	16.68	318	105	217	258	258+
Dayton	244	2.36+	17.16	299	61-	236	208	153-
Hamilton	51	1.96	16.00	294	78	48	229	208
Lima	38	1.94	16.18	289	26	37	243	162
Lorain-Elyria	80	2.93++	13.51	263	125	72	181	125-
Mansfield	25	1.64	15.28	240	120	24	125	167
Steubenville	45	2.05	18.58	356	111	42	214	143
Toledo	121	1.71	16.88	240	66	116	216	190
Youngstown	146	2.11	19.14	274	103	135	237	252

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease			Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other
		Other cardiac events	cardiac events	events						
North Central	285	46	133	17	25	30	8	3	22	22
East North Central	293	51	136	19	25	30	8	3	22	22
Ohio	285	52	132	17	27	28	6	2	20	20
Akron	302	23--	158	9	42	37	14	5	14	14
Canton	316	79	158	18	35	18	0	0	9	9
Cincinnati	316	61	155	13	37	27	13	3	7	7
Cleveland	262	42	122	16	20	14--	10	8	30	30
Columbus	355	51	138	18	28	60+	18	5	37	37
Dayton	212-	38	106	13	25	25	0	4	4	4
Hamilton	375	125	167	42	0	42	0	0	0	0
Lima	162	27	81	0	27	0	0	0	27	27
Lorain-Elyria	181	14	83	14	28	42	0	0	0	0
Mansfield	292	83	125	0	0	42	0	0	42	42
Steubenville	143-	71	48	0	0	0	0	0	24	24
Toledo	198	60	60--	0	9	43	0	0	26	26
Youngstown	341	37	215	22	22	22	0	0	22	22

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	
Indiana	1,398	2.24++	17.33	240--	107	254
Anderson	35	2.04	18.20	286	229+	208
Bloomington	16	2.02	15.50	375	0	290
Elkhart-Goshen	34	2.17	17.18	147--	118	188
Evansville	65	1.89	18.49	215	138	313
Fort Wayne	73	1.94	15.74	123--	96	258
Gary-Hammond	199	3.25++	20.90	156--	126	311
Indianapolis	263	2.22	17.33	316	103	191
Kokomo	29	2.67	15.72	207	69	251
Lafayette	16	1.43	17.81	313	250	241
Muncie	11	0.80--	18.73	0	182	308
South Bend	77	2.32	14.14	117--	10	200
Terre Haute	54	2.76+	14.09	259	93	158
						240
Illinois	2,410	1.91--	16.13	220--	91	255+
Aurora-Elgin	45	1.45--	18.80	222	111	256
Bloomington	39	3.08+	14.00	256	51	237
Champaign	19	1.42	16.47	474	105	184
Chicago	1,115	1.83--	17.46	181--	94	167
Decatur	33	2.06	11.94	152--	61	246
Joliet	59	2.10	12.25	271	68	156
Kankakee	28	2.33	15.57	143	179	250
Lake County	70	1.94	16.21	211--	100	481+
Peoria	95	2.18	17.97	211--	67	254
Rockford	48	1.69	16.71	375	53	194
Springfield	49	1.98	19.41	286	83	435++
					143	292
						271
						230++
						116
						184
						56
						231+
						188
						196
						407+
						194
						204
						174
						292

(1) Percutaneous transluminal coronary angioplasty.
(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease					Cardiac catheterization without revascularization			
		Other cardiac events	Noncardiac vascular events	Infections	Subsequent PTCA(1)	Subsequent CABG(2)	Other			
Indiana	285	39	15	24	33	11	2	21		
Anderson	516+	97	0	65	32	32	0	0		
Bloomington	313	0	0	63	63	0	0	0		
Elkhart-Goshen	290	65	0	0	32	0	0	65		
Evansville	262	16	0	33	16	0	0	49		
Fort Wayne	118--	29	0	15	0	0	0	0		
Gary-Hammond	279	38	22	16	27	0	0	16		
Indianapolis	290	41	12	29	37	24+	0	16		
Kokomo	172	0	34	34	0	0	0	0		
Lafayette	308	0	0	77	0	77	0	77		
Muncie	300	100	0	0	0	0	0	0		
South Bend	250	13	13	13	26	13	0	13		
Terre Haute	380	120	0	0	100+	20	20	20		
Illinois	319+	56	24	26	35	8	4	23		
Aurora-Elgin	163	0	0	0	23	23	0	23		
Bloomington	211	53	0	26	0	0	0	0		
Champaign	111	0	0	0	56	0	56	0		
Chicago	318	60	26	29	33	7	6	17		
Decatur	313	31	0	31	63	0	0	31		
Joliet	321	0	18	36	18	18	0	18		
Kankakee	519+	148	111+	37	37	0	0	0		
Lake County	269	30	45	30	45	15	0	30		
Peoria	237	22	11	32	32	0	0	11		
Rockford	239	65	43	0	22	0	0	43		
Springfield	354	0	0	21	21	0	0	42		

(1) Percutaneous transluminal coronary angioplasty.
(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Index stay							Number of persons with 1 readmission or more per 1,000 live discharges
Area of residence	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	
Michigan	2,048	2.08	14.56	267--	84--	1,949	202
Ann Arbor	30	1.69	18.00	333	33	29	172
Battle Creek	19	1.13--	11.68	263	53	18	56
Benton Harbor	52	2.41	13.94	115--	115	48	83
Detroit	874	1.95	15.47	222--	85	833	206
Flint	112	2.60+	13.69	268	80	105	305+
Grand Rapids	144	2.25	13.48	313	69	135	126--
Jackson	31	1.82	17.65	355	161	30	267
Kalamazoo	58	2.70	15.40	121--	86	55	127
Lansing	77	2.37	12.45	519++	65	73	233
Muskegon	41	2.16	13.76	146--	98	38	211
Saginaw	112	2.66+	13.08	438++	54-	108	259
Wisconsin	1,354	2.22++	15.53	409++	96	1,285	197
Appleton	72	2.09	13.92	319	0--	72	181
Eau Claire	29	1.71	13.90	517	34	29	103
Green Bay	35	1.82	13.49	200	57	34	118
Janesville	36	2.18	15.72	278	111	33	212
Kenosha	52	3.64++	13.42	481+	135	48	188
LaCrosse	27	2.28	19.59	556+	296+	22	500+
Madison	56	1.82	17.41	286	107	53	264
Milwaukee	438	2.63++	16.25	530++	128	407	236
Racine	34	1.66	14.79	353	59	34	294
Sheboygan	33	2.28	14.30	455	121	30	300
Wausau	24	1.85	14.42	333	42	24	83

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease					Cardiac catheterization without revascularization			Subsequent CABG(2)	Other
		Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)					
Michigan	282	129	15	25	19--	7	4	23			
Ann Arbor	172	103	0	0	0	0	0	34			
Battle Creek	56	0	0	0	0	0	0	56			
Benton Harbor	125--	42	21	0	21	0	0	42			
Detroit	301	146	14	17	20	10	4	20			
Flint	400	162	29	48	19	10	10	38			
Grand Rapids	148--	52--	15	30	7	22	7	22			
Jackson	533+	233	0	33	67	33	0	0			
Kalamazoo	200	91	0	36	36	18	0	0			
Lansing	288	123	14	27	27	14	14	0			
Muskegon	237	79	26	26	26	26	0	26			
Saginaw	333	167	9	19	19	0	0	37			
Wisconsin	286	136	23	24	35	7	2	20			
Appleton	222	97	14	28	56	0	0	14			
Eau Claire	103	69	0	0	0	0	0	0			
Green Bay	206	176	0	0	0	0	0	0			
Janesville	394	182	61	30	0	30	0	0			
Kenosha	417	271+	0	21	63	42	0	0			
LaCrosse	636+	318	0	45	45	45	0	91			
Madison	283	151	0	57	19	0	0	57			
Milwaukee	327	152	22	32	57+	5	2	15			
Racine	676++	412++	59	59	29	0	0	0			
Sheboygan	400	133	0	0	100	33	0	33			
Wausau	167	83	0	0	0	0	0	0			

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
West North Central	4,542	2.11++	15.21	293-	86--	4,320	241	192
Minnesota	726	1.83--	14.43	428++	92	688	225	195
Duluth	58	1.93	13.24	466+	69	56	250	161
Minneapolis	239	1.69--	15.77	456++	117	219	228	210
Rochester	19	2.02	14.37	526	53	18	222	167
St. Cloud	21	1.71	12.43	667+	48	21	571++	381
Iowa	788	1.95	15.07	249--	91	740	204-	149--
Cedar Rapids	88	4.55++	13.83	159--	34	86	209	128-
Davenport	58	1.30--	13.59	293	138	53	208	189
Des Moines	84	2.10	16.04	155--	119	74	216	122-
Dubuque	14	1.22-	12.07	71	0	14	286	214
Iowa City	12	1.92	17.75	500	83	11	182	0
Sioux City	21	1.32-	16.86	667+	95	19	105	158
Waterloo	40	2.05	14.18	175-	0-	40	125	75
Missouri	1,592	2.43++	16.15	254--	80--	1,533	253	211
Columbia	33	3.86++	16.00	364	30	33	273	212
Joplin	47	2.44	14.00	213	64	45	178	133
Kansas City	299	1.93	17.44	221--	97	286	276	210
St. Joseph	18	1.32-	16.44	167	0	18	167	111
St. Louis	729	2.57++	15.79	283	84	702	228	218
Springfield	62	2.24	16.56	210	65	60	217	167
North Dakota	250	2.93++	14.55	220--	44--	244	242	193
Bismarck	21	2.57	15.00	333	48	20	200	50
Fargo	34	2.40	14.44	29--	59	32	188	63
Grand Forks	17	2.99	13.59	59	59	16	188	125

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease					Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other
		37--	44	36	32	0	126	14-	25	30	9	3
West North Central	268											23
Minnesota	294						137					26
Duluth	286	44					125	9--		39	13	3
Minneapolis	333	36					192	18		18	18	0
Rochester	222	32					111	9		37	14	0
St. Cloud	524	0					333+	0		111	0	0
		0						0		95	0	48
Iowa	205--						81--					
Cedar Rapids	163-	39					93	9-		32	11	5
Davenport	245	23					75	0		23	0	12-
Des Moines	162-	19					14--	19		57	0	12
Dubuque	357	14					143	0		41	27	38
Iowa City	0	214					0	0		0	14	14
Sioux City	211	0					53	0		0	0	0
Waterloo	75--	105					50	53		0	0	0
		0						0		25	0	0
Missouri	291						155+					
Columbia	303	29--					212	16		31	6	25
Joplin	156	0					22-	30		30	0	0
Kansas City	276	0					108	22		44	0	22
St. Joseph	111	35					0	17		38	7	0
St. Louis	311	0					167+	0		56	0	45+
Springfield	183	36					100	19		33	4	0
		17						33		17	0	28
											17	0
North Dakota	258						127					
Bismarck	50-	53					50	16		20	4	20
Fargo	94-	0					0-	0		0	0	0
Grand Forks	125	31					63	0		0	0	63
		63						0		0	0	0

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
South Dakota	208	2.16	14.50	168--	77	200	265	200
Rapid City	10	1.40	12.30	400	0	10	400	300
Sioux Falls	30	2.26	16.30	100-	100	30	233	200
Nebraska	373	1.78-	14.39	370+	107	346	243	159-
Lincoln	39	1.86	13.79	333	77	36	250	167
Omaha	110	1.91	16.35	427+	164	98	265	224
Kansas	605	1.97	14.88	316	93	569	264	211
Lawrence	6	1.21	15.33	167	333	4	0	0
Topeka	40	2.11	17.05	125--	100	36	250	83
Wichita	98	2.14	13.35	439++	71	93	280	215
South	19,263	2.15++	15.37	286--	103++	18,105	238	203
South Atlantic	9,555	2.05	15.50	308	97	9,007	228	198
Delaware	148	2.11	17.07	318	88	140	229	214
Wilmington	127	2.19	16.88	315	126	117	205	197
Maryland	845	1.94	14.90	293	91	803	243	228
Baltimore	498	2.03	14.40	376++	84	474	241	224
Cumberland	13	0.76--	10.77	462	77	12	83	250
Hagerstown	17	1.17--	12.18	176	118	16	313	188
Dist. of Columbia	82	1.24--	17.70	256	134	74	189	284
Washington	420	1.62--	15.76	186--	105	393	234	244+

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease										Cardiac catheterization without revascularization			
Area of residence	Total	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other					
South Dakota	255	35	5	45	25	10	0	10					
Rapid City	500	0	0	100	0	100	0	0					
Sioux Falls	333	33	0	0	133+	0	0	0					
Nebraska	214-	32	12	35	17	12	0	29					
Lincoln	167	28	0	56	28	0	0	28					
Omaha	367	31	10	51	41	20	0	41					
Kansas	299	40	26	35	28	12	0	33					
Lawrence	0	0	0	0	0	0	0	0					
Topeka	111--	0	0	0	28	56	0	0					
Wichita	280	11	43	65+	54	0	0	22					
South	282	50	20	24	29	6-	2	21					
South Atlantic	276	50	17	25	28	7	3	18-					
Delaware	293	71	21	14	50	7	0	7					
Wilmington	256	60	17	17	9	0	9	17					
Maryland	328	55	6--	29	25	1-	4	26					
Baltimore	325	65	6-	25	17	0	4	30					
Cumberland	500	333++	0	0	83	0	0	0					
Hagerstown	313	0	0	0	0	0	0	0					
Dist. of Columbia	446	81	14	68	68	14	0	14					
Washington	326	41	18	51++	38	5	5	20					

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	
Virginia	990	1.76--	14.96	198--	88	193
Charlottesville	10	0.83--	14.20	300	100	200
Danville	15	0.97--	19.67	467	200	143
Lynchburg	13	0.72--	14.62	231	0	154
Norfolk	253	2.45++	13.57	99--	99	202
Richmond	181	2.11	15.44	199--	77	223
Roanoke	60	1.96	20.15	333	83	143
West Virginia	442	1.81--	16.85	337	120	189
Charleston	106	3.10++	15.58	292	85	206
Huntington	46	1.12--	16.93	217	87	182
Parkersburg	34	1.71	14.68	353	118	303
Wheeling	21	0.95--	18.14	286	190	474
North Carolina	1,307	1.90--	16.22	392++	92	215
Asheville	41	1.68	18.29	293	24	325
Burlington	38	2.62	16.71	421	105	175
Charlotte	204	1.87	14.80	319	113	250
Fayetteville	22	1.64	15.14	682++	136	196
Greensboro	193	1.94	17.77	321	83	286
Hickory	51	2.18	13.22	353	157	183
Jacksonville	10	1.95	18.90	500	200	152
Raleigh-Durham	110	1.95	16.44	445++	73	500
Wilmington	21	1.66	18.67	619+	48	123--
						142--
						190

(1) Percutaneous transluminal coronary angioplasty.
(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease		Cardiac catheterization without revascularization									
Area of residence	Total	Other cardiac events	Noncardiac vascular events	Infections	Subsequent PTCA(1)	Subsequent CABG(2)	Other				
Virginia	272	141	23	28	8	2	14--				
Charlottesville	300	100	0	0	0	0	0				
Danville	143	0	0	0	0	0	0				
Lynchburg	154	0	0	154	0	0	0				
Norfolk	231	145	21	12	8	0	17				
Richmond	291	154	40	23	23	0	17				
Roanoke	232	107	18	54	0	0	18				
West Virginia	257	114	22	15	2	0	22				
Charleston	137--	29--	29	29	0	0	10				
Huntington	182	114	23	0	0	0	0				
Parkersburg	455	91	0	91	0	0	0				
Wheeling	368	211	0	0	0	0	0				
North Carolina	248--	121	18	23	6	2	13--				
Asheville	200	100	50	0	0	0	25				
Burlington	250	194	28	28	0	0	0				
Charlotte	265	111	21	21	21	11	5				
Fayetteville	476	286	0	95	0	0	0				
Greensboro	211	89	17	22	6	0	6				
Hickory	283	109	0	22	0	0	0				
Jacksonville	900++	200	0	100	0	0	0				
Raleigh-Durham	142--	85	9	0	9	0	200+				
Wilmington	190	95	48	0	0	0	0				

(1) Percutaneous transluminal coronary angioplasty.
(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
South Carolina	667	2.03	15.40	265-	91	636	208	178
Anderson	32	1.93	14.06	406	0	32	250	219
Charleston	68	1.99	19.13	382	103	64	234	172
Columbia	94	2.66+	15.71	298	85	92	196	185
Florence	29	2.59	20.00	138	138	27	333	296
Greenville	129	1.96	14.35	109--	54-	125	144--	136-
Georgia	1,218	2.17+	13.59	281-	97	1,147	251	233+
Albany	11	1.18-	11.18	455	91	10	200	200
Athens	28	2.07	9.43	286	36	28	143	179
Atlanta	350	1.85	13.03	331	100	327	251	245
Augusta	77	2.34	19.66	52--	182+	69	246	174
Columbus	35	1.53	16.49	229	229+	29	103	34-
Macon	62	2.39	16.32	97--	113	56	321	304
Savannah	81	3.20++	12.93	185--	49	80	238	225

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease					Cardiac catheterization without revascularization		Subsequent CABG(2)	Other
		Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)				
South Carolina	244	44	17	27	22	9	3	16		
Anderson	250	31	0	31	0	0	0	63		
Charleston	250	0	16	16	31	0	16	0		
Columbia	217	0-	22	22	33	22	0	22		
Florence	370	74	37	37	0	0	0	74		
Greenville	168--	32	24	8	16	0	0	8		
Georgia	333+	52	17	30	35	7	3	28		
Albany	200	0	0	0	0	0	0	100		
Athens	250	0	0	107	36	0	0	0		
Atlanta	343	43	6	21	43	6	6	34		
Augusta	275	72	0	14	14	43+	0	0		
Columbus	34--	0	0	0	0	0	0	34		
Macon	429	36	0	18	125++	36	18	36		
Savannah	325	38	25	38	88+	25	0	13		

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	
Florida	3,856	2.26++	15.88	324+	100	3,614
Bradenton	88	2.05	14.35	409	57	86
Daytona Beach	170	2.71++	13.08	241-	94	163
Fort Lauderdale	475	2.61++	18.59	335	135+	430
Fort Myers	152	2.47+	13.96	474++	66	144
Fort Pierce	97	2.35	18.21	443++	93	92
Ft. Walton Beach	28	2.75	12.57	250	107	26
Gainesville	24	1.43-	16.42	542	83	22
Jacksonville	244	3.02++	15.59	352	111	229
Lakeland	138	2.49+	15.55	181--	87	131
Melbourne	138	2.97++	15.64	326	109	126
Miami-Hialeah	275	1.63--	20.88	215--	131	253
Naples	49	2.09	14.10	408	41	49
Ocala	46	1.47-	15.48	304	174	40
Orlando	233	2.57++	14.89	258	86	217
Panama City	31	2.62	13.97	258	97	30
Pensacola	74	2.47	12.23	351	108	70
Sarasota	170	2.18	16.44	194--	100	160
Tallahassee	32	1.84	13.50	500	94	30
Tampa	565	1.74--	14.23	258--	104	526
West Palm Beach	356	2.55++	16.84	452++	65-	340
East South Central	3,968	2.30++	15.18	247--	107+	3,726
Kentucky	839	1.99	16.14	344+	117	783
Lexington	48	1.55-	18.56	563++	63	46
Louisville	243	2.26	15.57	325	140	226
Owensboro	16	1.55	13.44	0-	125	14
						257
						71
						207
						229
						152
						257
						71

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease		Cardiac catheterization without revascularization						
Area of residence	Total	Other cardiac events	Noncardiac vascular events	Infections	Subsequent PTCA(1)	Subsequent CABG(2)	Other	
Florida	262-	113--	18	23	7	2	16-	
Bradenton	337	140	23	35	12	12	12	
Daytona Beach	288	147	18	18	12	0	6	
Fort Lauderdale	291	126	19	19	7	2	21	
Fort Myers	229	83	21	28	21	0	0	
Fort Pierce	348	65-	22	76+	0	0	0	
Ft. Walton Beach	308	154	0	38	0	0	38	
Gainesville	136	91	0	0	0	0	0	
Jacksonville	197-	105	22	13	0	4	9	
Lakeland	168--	84	23	8	8	0	0	
Melbourne	286	79	8	8	16	0	40	
Miami-Hialeah	269	134	20	12	8	0	0--	
Naples	245	143	0	20	20	0	20	
Ocala	225	175	25	0	0	0	0	
Orlando	226	88	23	32	0	0	23	
Panama City	200	100	0	0	0	0	33	
Pensacola	357	214	29	14	29	0	0	
Sarasota	188-	88	0	13	6	0	19	
Tallahassee	400	300+	33	0	0	0	0	
Tampa	260	95-	15	32	4	6	25	
West Palm Beach	291	97	21	35	15	0	18	
East South Central	295	136	19	23	5-	2	26	
Kentucky	315	140	22	33	3	4	19	
Lexington	217	109	22	22	0	0	0	
Louisville	381+	199+	27	53+	4	0	18	
Owensboro	71	0	0	0	0	0	0	

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Index stay							Number of persons with 1 readmission or more per 1,000 live discharges	
Area of residence	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
Tennessee	1,327	2.41++	16.05	196--	120+	1,231	247	202
Chattanooga	106	2.12	15.69	104--	132	98	194	143
Clarksville	30	2.39	15.83	300	167	26	269	154
Jackson	18	1.79	14.61	111	222	16	313	250
Johnson City	96	1.74	13.11	52--	42	94	255	191
Knoxville	191	2.69++	13.55	283	105	180	256	189
Memphis	227	2.56++	18.71	189--	110	209	263	225
Nashville	244	2.62++	16.00	250-	119	228	193	175
Alabama	1,241	2.68++	14.05	275--	91	1,185	260+	214
Anniston	33	2.51	12.52	152-	152	31	258	258
Birmingham	327	3.01++	14.86	266	83	313	236	201
Dothan	47	3.70++	13.83	383	85	45	356	178
Florence	58	3.48++	10.33	138--	69	56	268	232
Gadsden	62	4.34++	11.42	274	48	61	311	262
Huntsville	54	3.15++	17.61	185-	130	50	100--	100-
Mobile	97	1.92	12.03	474++	62	93	226	194
Montgomery	60	2.01	15.03	367	117	55	273	291
Tuscaloosa	32	2.35	14.06	94-	188	29	276	138
Mississippi	561	1.93	14.19	160--	100	527	254	167-
Biloxi-Gulfport	51	2.82+	14.43	235	78	50	200	80--
Jackson	72	2.04	13.78	153--	83	69	159	130
Pascagoula	20	2.34	16.05	400	100	19	316	105

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease		Cardiac catheterization without revascularization					Subsequent PTCA(1)		Subsequent CABG(2)		Other	
Area of residence	Total	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other				
Tennessee	285	141	18	20	29	3	2	28				
Chattanooga	265	194	10	0	20	0	0	20				
Clarksville	231	154	0	77	0	0	0	0				
Jackson	313	250	0	0	63	0	0	0				
Johnson City	245	170	11	0	32	0	0	0				
Knoxville	250	133	6	33	17	11	0	28				
Memphis	278	105	10	5	77++	10	5	19				
Nashville	259	127	22	18	9	4	0	39				
Alabama	325+	150	18	20	36	8	3	30				
Anniston	290	97	32	0	32	0	0	0				
Birmingham	281	137	10	16	38	10	3	19				
Dothan	267	133	44	22	22	0	0	22				
Florence	304	161	18	18	18	18	0	54				
Gadsden	410	180	16	0	33	0	16	66				
Huntsville	120--	80	0	0	20	20	0	0				
Mobile	355	140	11	22	65	11	0	43				
Montgomery	418	145	36	73	73	18	0	0				
Tuscaloosa	172	103	0	34	0	0	0	0				
Mississippi	220--	83--	23	23	17--	6	0	23				
Biloxi-Gulfport	80--	40	0	0	0	0	0	20				
Jackson	174	29--	14	0	29	14	0	29				
Pascagoula	316	105	0	53	53	0	0	0				

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
West South Central	5,740	2.22++	15.28	276--	111++	5,372	242	207
Arkansas	888	2.76++	14.45	289	114	839	261	226
Fayetteville	44	3.73++	15.66	385	68	43	279	233
Fort Smith	40	1.87	13.35	75--	175	38	263	316
Little Rock	186	3.65++	15.39	323	108	174	259	207
Pine Bluff	11	1.00--	12.18	182	273	9	0	111
Louisiana	845	2.03	15.95	258--	111	792	282++	226
Alexandria	35	2.53	16.77	314	114	32	188	250
Baton Rouge	120	3.03++	16.66	333	100	116	233	207
Houma-Thibodaux	56	4.15++	14.93	179-	54	56	304	286
Lafayette	25	1.71	15.44	520	200	22	182	45
Lake Charles	30	1.83	15.90	133	67	29	310	207
Monroe	15	1.02--	13.07	333	67	14	143	71
New Orleans	233	1.96	16.58	176--	112	218	284	225
Shreveport	84	2.28	16.74	214-	107	77	377++	247
Oklahoma	842	2.22++	15.21	227--	93	795	218	177
Enid	9	1.10-	11.78	222	111	8	0	125
Lawton	22	2.68	10.68	273	0	22	136	136
Oklahoma City	221	2.49++	14.53	118--	59-	214	192	154-
Tulsa	169	2.38+	17.42	290	130	153	203	196

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Area of residence		Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other
West South Central		283	49	129	23+	23	29	7	2	21
Arkansas		316	45	157	30	21	26	5	1	30
Fayetteville		372	70	186	23	23	23	0	0	47
Fort Smith		500	79	211	26	53	79	0	0	53
Little Rock		276	34	126	46+	34	11	6	0	17
Pine Bluff		111	0	0	0	0	111	0	0	0
Louisiana		321	47	144	30	20	32	11	3	34
Alexandria		281	31	156	0	31	0	0	0	63
Baton Rouge		276	9-	147	17	17	52	17	0	17
Houma-Thibodaux		393	36	179	18	0	71	18	18	54
Lafayette		45-	0	0	0	45	0	0	0	0
Lake Charles		379	0	310+	0	34	34	0	0	0
Monroe		71	71	0	0	0	0	0	0	0
New Orleans		312	37	124	41+	32	32	5	5	37
Shreveport		299	52	104	39	26	13	0	0	65
Oklahoma		231--	54	101-	13	26	19-	5	1	13-
Enid		125	0	125	0	0	0	0	0	0
Lawton		182	0	136	0	0	45	0	0	0
Oklahoma City		220	23-	98	19	19	37	0	5	19
Tulsa		235	59	118	13	20	20	0	0	7

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
Texas	3,165	2.16++	15.36	291-	114++	2,946	233	204
Abilene	23	1.76	22.61	478	87	22	273	273
Amarillo	31	1.63	13.29	194	226	28	214	71
Austin	97	2.04	15.32	289	93	91	220	198
Beaumont	105	2.48	15.89	276	76	98	235	224
Brazoria	34	2.72	18.24	147--	88	31	355	419+
Brownsville	56	2.78+	13.68	161--	143	49	204	122
Bryan	14	2.01	16.71	286	143	12	167	250
Corpus Christi	44	1.55-	18.68	114--	159	41	366	268
Dallas	414	2.41++	14.87	360+	92	396	212	199
El Paso	96	2.57+	13.73	250	94	92	250	217
Fort Worth	153	1.56--	13.02	477++	65	147	150--	150
Galveston	54	2.79+	15.09	296	37	53	189	170
Houston	461	2.45++	17.50	206--	145++	415	243	212
Killeen-Temple	28	1.63	15.11	357	179	26	269	154
Laredo	11	1.31	13.55	0	0	11	364	364
Longview	34	1.65	14.12	176-	147	30	133	133
Lubbock	59	3.11++	15.66	661++	136	54	259	204
McAllen	111	4.05++	13.63	180--	99	106	208	208
Midland	26	3.53+	10.92	231	38	25	200	80
Odessa	26	2.82	12.85	77-	115	26	192	115
San Angelo	30	2.68	12.37	400	67	28	250	214
San Antonio	182	1.69--	16.57	187--	176++	162	259	222
Sherman-Denison	38	2.61	11.05	500+	79	37	270	243
Texarkana	40	2.61	13.30	200	100	38	211	158
Tyler	37	2.03	15.27	459	27	37	297	162
Victoria	15	2.18	13.73	200	267	12	250	167
Waco	27	1.14--	12.00	222	148	25	200	320
Wichita Falls	46	3.18+	20.17	239	152	42	262	310

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease					Cardiac catheterization without revascularization			Subsequent CABG(2)	Subsequent PTCA(1)	Other
		Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent CABG(2)						
Texas	277	124	22	23	31	6	3	18				
Abilene	364	273	0	0	45	0	0	0				
Amarillo	71-	0	0	0	0	0	0	36				
Austin	231	110	33	33	22	0	0	0				
Beaumont	255	92	31	10	71	0	0	20				
Brazoria	645++	290+	32	97	32	0	0	65				
Brownsville	143-	0--	20	41	20	20	0	0				
Bryan	250	0	0	0	0	0	0	250++				
Corpus Christi	366	171	49	24	49	24	0	24				
Dallas	260	129	3-	28	28	3	5	15				
El Paso	337	217	54	0	33	0	0	11				
Fort Worth	211	68--	27	0	41	0	0	20				
Galveston	208	75	19	19	38	0	0	0				
Houston	292	142	31	14	19	7	2	27				
Killeen-Temple	154	38	0	115+	0	0	0	0				
Laredo	636	545++	0	0	91	0	0	0				
Longview	267	133	0	0	33	0	0	0				
Lubbock	259	111	37	0	74	0	0	0				
McAllen	274	104	9	19	47	19	9	9				
Midland	80	0	0	40	0	0	0	40				
Odessa	115	0	38	38	0	0	0	38				
San Angelo	214	107	36	0	36	0	0	0				
San Antonio	346	185	31	25	49	6	12	0				
Sherman-Denison	351	108	54	54	54	27	0	0				
Texarkana	211	132	26	26	0	0	0	0				
Tyler	216	54	0	27	54	0	0	0				
Victoria	250	250	0	0	0	0	0	0				
Waco	440	200	0	0	80	0	0	80				
Wichita Falls	429	214	24	48	24	0	0	24				

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Index stay					Number of persons with 1 readmission or more per 1,000 live discharges			
Area of residence	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
West	9,685	2.13++	13.63	370++	94	9,170	216--	194-
Mountain	2,420	2.02	14.30	369++	98	2,287	225	187
Montana	257	2.64++	13.57	315	109	241	266	195
Billings	32	2.65	19.25	375	125	28	429	393
Great Falls	21	2.31	12.24	333	95	20	300	50
Idaho	260	2.37+	12.48	458++	92	249	213	213
Boise City	42	2.27	11.95	405	48	40	175	125
Wyoming	118	2.78++	12.65	280	93	115	278	139-
Casper	30	5.58++	16.73	333	233	28	214	143
Cheyenne	13	1.89	12.54	308	0	13	385	0
Colorado	410	1.54--	14.33	305	95	387	207	181
Boulder-Longmont	15	0.99--	15.93	533	67	14	71	71
Colorado Springs	50	2.01	12.00	320	120	46	217	130
Denver	169	1.41--	15.37	325	83	158	241	228
Fort Collins	22	1.46	12.45	364	45	23	273	273
Greeley	38	3.27+	16.11	26--	158	35	86	114
Pueblo	17	1.11--	11.59	176	235	16	250	188
New Mexico	188	1.50--	14.22	351	117	174	213	195
Albuquerque	48	1.42--	15.15	375	146	43	209	186
Las Cruces	17	1.81	16.94	235	118	15	200	133
Santa Fe	6	0.71--	12.00	500	0	6	0	0

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges										
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other	
West	270-	44--	118--	21	20	29	11++	4	23	
Mountain	255-	45	97--	19	23	31	9	4	28	
Montana	261	37	58--	12	29	54	25+	0	46+	
Billings	500	36	107	36	71	36	143++	0	71	
Great Falls	50-	0	0	0	0	0	0	0	50	
Idaho	305	88	100	12	20	36	12	8	28	
Boise City	200	25	25	0	25	50	75++	0	0	
Wyoming	278	43	139	9	35	17	9	0	26	
Casper	464	0	357++	36	0	36	0	0	36	
Cheyenne	0	0	0	0	0	0	0	0	0	
Colorado	233	23--	93-	23	34	8--	8	5	39	
Boulder-Longmont	143	0	71	0	71	0	0	0	0	
Colorado Springs	130-	22	65	0	22	0	0	0	22	
Denver	297	25	158	38	13	6	0	6	51+	
Fort Collins	318	45	0	45	136+	45	0	0	45	
Greeley	200	0	29	29	29	29	29	29	29	
Pueblo	188	0	125	0	63	0	0	0	0	
New Mexico	264	69	92	0	29	34	0	6	34	
Albuquerque	326	93	116	0	23	47	0	23	23	
Las Cruces	200	67	67	0	0	0	0	0	67	
Santa Fe	0	0	0	0	0	0	0	0	0	

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Index stay							Number of persons with 1 readmission or more per 1,000 live discharges	
Area of residence	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive		Within 90 days for any cause
Arizona	709	2.03	15.61	429++	86	671	231	192
Phoenix	441	2.35++	15.37	465++	75	421	209	183
Tucson	125	1.77	17.22	344	128	114	281	228
Utah	305	2.37++	12.60	387++	85	291	199	172
Provo-Orem	43	2.67	13.07	349	93	41	220	146
Salt Lake City	173	2.24	13.02	416++	75	165	182	152
Nevada	173	2.11	16.90	277	145	159	226	182
Las Vegas	125	2.76++	17.48	232-	120	116	207	155
Reno	29	1.52	16.93	379	207	26	308	346
Pacific	7,265	2.18++	13.41	370++	93	6,883	213--	196
Washington	1,291	2.80++	11.91	504++	86	1,227	203--	192
Bellingham	35	2.57	10.89	629++	57	34	88	147
Bremerton	32	2.07	11.53	406	63	31	226	129
Olympia	51	3.58++	9.94	608++	78	49	265	245
Richland	43	3.42++	12.07	512++	70	41	195	195
Seattle	440	2.75++	11.58	498++	84	421	207	216
Spokane	121	2.93++	12.80	570++	66	116	250	224
Tacoma	165	3.28++	12.83	576++	85	157	172-	108--
Vancouver	42	2.46	11.74	357	119	40	225	225
Yakima	45	1.98	12.80	178-	111	41	171	317
Oregon	639	2.10	11.76	438++	52--	622	180--	156--
Eugene	49	1.69	13.16	714++	102	48	271	229
Medford	52	2.56	10.77	462+	38	51	176	235
Portland	193	1.95	12.66	378+	52--	188	144--	133--
Salem	62	1.86	9.73	403	65	61	164	66--

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease			Noncardiac vascular events	Infec- tions	Cardiac catheter- ization without revascular- ization	Subsequent PTCA(1)	Subsequent CABG(2)	Other
		45	43	44						
Arizona	258									
Phoenix	240									
Tucson	289									
Utah	230									
Provo-Orem	195									
Salt Lake City	212									
Nevada	226									
Las Vegas	207									
Reno	385									
Pacific	275									
Washington	269									
Bellingham	176									
Bremerton	194									
Olympia	367									
Richland	293									
Seattle	325									
Spokane	293									
Tacoma	153--									
Vancouver	350									
Yakima	463									
Oregon	235-									
Eugene	271									
Medford	314									
Portland	191-									
Salem	82--									

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	
California	5,158	2.08+	13.96	323+	99	203
Anaheim-Santa Ana	379	2.27+	13.51	478++	77	192
Bakersfield	104	2.31	12.65	481++	125	202
Chico	58	2.14	12.43	362	155	212
Fresno	156	2.67++	12.41	346	141	197
Los Angeles	1,247	1.84--	15.38	311	107	222
Merced	30	2.23	12.70	233	100	259
Modesito	91	2.71+	12.18	198--	88	205
Oakland	360	1.91	15.66	297	119	184
Oxnard-Ventura	78	1.58-	13.82	205-	141	183
Redding	42	2.36	11.98	286	71	195
Riverside	498	2.45++	12.44	299	98	220
Sacramento	307	2.55++	13.00	199--	59--	232
Salinas	39	1.34--	13.36	590++	128	165
San Diego	469	2.28++	12.91	337	75	265
San Francisco	230	1.40--	15.45	313	83	177
San Jose	223	2.12	14.72	368	90	200
Santa Barbara	65	1.71	11.89	185-	92	175
Santa Cruz	36	1.46-	15.83	583++	167	167
Santa Rosa	75	1.68	12.31	187--	32	375
Stockton	139	3.40++	15.39	317	120	164
Vallejo	126	3.52++	12.67	357	129	219
Visalia	47	1.63	11.13	383	71	195
Yuba City	21	1.77	16.76	286	149	233
					48	95
Alaska	25	1.53	12.04	400	80	160
Anchorage	13	2.31	13.92	462	0	154
Hawaii	152	1.89	14.78	500++	112	169
Honolulu	123	2.13	15.40	520++	114	140--

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Coronary artery bypass graft: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease					Cardiac catheterization without revascularization		Subsequent CABG(2)	Other
		Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)				
California	284	47	22	21	29	10	3	19		
Anaheim-Santa Ana	261	50	25	14	22	6	0	25		
Bakersfield	384	51	61+	20	20	20	10	20		
Chico	250	0	19	0	58	0	0	19		
Fresno	254	70	21	21	28	7	14	14		
Los Angeles	322+	61	15	20	36	14+	5	23		
Merced	259	37	37	37	0	0	0	37		
Modesto	284	34	34	11	57	23	0	11		
Oakland	265	39	18	18	30	3	3	27		
Oxnard-Ventura	211	56	14	14	28	14	0	0		
Redding	268	49	49	49	0	0	0	49		
Riverside	331	74	19	19	21	8	2	17		
Sacramento	215-	30	30	27	13	3	3	7		
Salinas	324	59	29	59	29	0	0	0		
San Diego	236	24--	22	22	15-	2	2	9		
San Francisco	268	27	18	18	27	5	5	23		
San Jose	222	57	28	0-	24	19	0	38		
Santa Barbara	217	33	0	17	0	33	0	17		
Santa Cruz	469	94	0	63	31	31	0	63		
Santa Rosa	179	0	15	30	75	0	0	0		
Stockton	344	31	16	31	39	16	0	23		
Vallejo	260	33	33	16	24	8	0	16		
Visalia	372	70	23	93+	70	0	0	23		
Yuba City	95	0	0	0	48	0	0	0		
Alaska	240	0	40	0	40	40	0	0		
Anchorage	231	0	77	0	77	0	0	0		
Hawaii	239	21	35	21	28	14	7	14		
Honolulu	202	18	44	9	18	18	9	9		

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Percutaneous transluminal coronary angioplasty

The number of percutaneous transluminal coronary angioplasty (PTCA) procedures has greatly increased during recent years. As shown in Volume 2, in 1986, approximately 50,000 PTCA's were performed on Medicare enrollees aged 65 years or over who did not have end stage renal disease and were not members of health maintenance organizations. Initially, the procedure was used to treat only single-vessel coronary disease. Over the years, however, it has been increasingly used to treat multiple-vessel disease, and it is now sometimes viewed as a substitute for coronary artery bypass graft (CABG) surgery. Unresolved questions remain about the most appropriate method for treating coronary artery disease in certain types of patients: medical management, PTCA, or CABG.

Adverse outcomes following PTCA are described in this volume. Hospital stays were included in the study if the principal ICD-9-CM procedure code was either 36.01 or 36.02. However, to confine this analysis to similar patients, several exclusions were made. Patients were excluded if certain other surgeries, such as heart valve surgery, were performed during their index stay (when the surgery was performed). Patients with both a PTCA and CABG performed during the index stay were classified as PTCA patients because they would have been admitted for a PTCA. Data on CABGs performed during the index stay and during readmissions are discussed later. The codes used to select PTCA patients for this analysis are shown in Table 1.

PTCA's performed in the 9-month period from October 1986 through June 1987 were studied in order to confine the analysis to the more precise ICD-9-CM codes 36.01 and 36.02 introduced at the beginning of this period. During this 9-month period, 28,817 PTCA's met the criteria for inclusion in this analysis. It should be remembered that the rates in Volume 2 are for 1986 and the rates in this publication are for the 9-month period from October 1, 1986, through June 30, 1987.

NOTE: For percutaneous transluminal coronary angioplasty, records of hospital stays with principal ICD-9-CM procedure code 36.01 or 36.02 were selected.

Rates for specific events

The ICD-9-CM codes that were used for selecting cases for this study are provided in Table 1. The diagnoses and procedures (with their ICD-9-CM codes) that were identified with the aid of a panel of specialists in cardiothoracic surgery, cardiology, and internal medicine as signifying potential adverse outcomes following PTCA are also listed. The conditions represented by these diagnoses or procedures are referred to as adverse events. The adverse events are categorized into eight event groups:

1. Angina, acute myocardial infarction (AMI), and other acute and subacute ischemic heart disease.
2. Other cardiac events.
3. Noncardiac vascular events.
4. Infections.
5. Cardiac catheterization without revascularization.
6. Subsequent PTCA.
7. Subsequent CABG.
8. Other events.

Table 1 also includes information on which codes were counted if they occurred in the index stay, which codes were counted in readmissions following PTCA, and the time interval required in order to include a readmission (for example, within 30 days of the date of the initial surgery).

As noted in the introduction, Medicare claims files for a hospital stay contain up to five diagnosis codes and three procedure codes. For this study, all four secondary diagnosis positions and all three procedure positions were used to identify events in the index stay. Thus, multiple events could be counted in the index stay. In contrast, only one procedure or the principal diagnosis was considered for readmission rates unless both a PTCA and CABG were performed during the readmission, in which case both were counted. (Diagnosis-related group codes 106 and 107 were used to identify CABGs.) For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code was used to define the event.

A total of 193.57 adverse events occurred during the index stay per 1,000 procedures. The codes identified as signaling adverse events in the index stay were limited in scope because of the

difficulty of distinguishing comorbidities from complications. Thus, the rate of adverse events during the index stay may be understated.

The total number of readmissions with adverse events was 558.18 per 1,000 persons discharged alive. Event Group 1, angina, AMI, and other acute and subacute ischemic heart disease, did not include any adverse events during the index stay because the category includes diagnoses that would be considered reasons for having a PTCA. This event group accounted for 128.96 readmissions per 1,000 persons discharged alive, or 23 percent of all readmissions. The most frequently reported individual event in this group was other acute and subacute forms of ischemic heart disease, with 80.54 readmissions per 1,000 live discharges. This was followed by angina pectoris and acute myocardial infarction, with 29.54 and 18.89 readmissions per 1,000 live discharges, respectively.

Event Group 2, other cardiac events, accounted for 44.94 events per 1,000 procedures during the index stay. The most frequently reported event in this group was cardiac complications during or resulting from a procedure, accounting for 29.25 events per 1,000 procedures. This diagnosis code represents occurrences such as cardiac arrest or insufficiency in the immediate operative or postoperative period. Mechanical complication of cardiac device, implant, and graft due to coronary bypass accounted for 15.69 events per 1,000 procedures in the index stay. Event Group 2 accounted for 80.54 readmissions per 1,000 persons discharged alive. Most of these readmissions were for heart failure and cardiac dysrhythmias, with 42.96 and 30.29 readmissions per 1,000 persons discharged alive, respectively.

Event Group 3, noncardiac vascular events, and Event Group 4, infections, accounted for 3.78 and 9.54 events in the index stay per 1,000 procedures, respectively. Readmissions for Event Groups 3 and 4 were also relatively infrequent—13.68 and 6.54 readmissions per 1,000 discharged alive, respectively.

Event Group 5, cardiac catheterization without revascularization, accounted for 117.68 readmissions per 1,000 live discharges. This large number of cardiac catheterizations without revascularization may reflect cases in which an individual had the catheterization and was then electively readmitted for a PTCA or CABG at a later date. (Catheterizations were not included as adverse events during the index stay.)

Event Group 6, subsequent PTCA, includes cases in which PTCA codes appear in two positions on the record for the index stay. This event group accounted for far fewer events during the index

stay than did Event Group 7, subsequent CABG (12.84 versus 45.04 events per 1,000 procedures). However, the most frequently reported event causing a readmission was subsequent PTCA, with 139.64 readmissions per 1,000 live discharges. That is, of all patients followed in this analysis who had an initial PTCA, nearly 14 percent had a subsequent PTCA in a later admission within a year of the index PTCA. Event Group 7, subsequent CABG, accounted for 61.46 readmissions per 1,000 persons discharged alive within a year of the index PTCA.

Event Group 8, other events, accounted for 77.42 events in the index stay per 1,000 procedures, or 40 percent of all index-stay events. More than one-half of these (43.76 events per 1,000 procedures) consisted of hemorrhage or hematoma complicating a procedure, and slightly more than one-fifth (16.38 events per 1,000 procedures) included other complications of internal prosthetic device, implant, and graft. There were few readmissions for this event group (9.68 readmissions per 1,000 persons discharged alive).

Patterns by age, sex, and race

Table 2 contains information on rates of PTCA, average length of stay (ALOS), and outcomes following PTCA for all persons combined and by age, sex, and race. In the study period, October 1986-June 1987, 28,817 PTCA index procedures were performed, for a rate of 1.08 procedures per 1,000 Medicare enrollees 65 years of age or over. Of 1,000 persons undergoing the procedure, 159 persons (16 percent) experienced at least one adverse event during the index hospital stay. Of the 28,817 persons with index PTCAs, 28,000 were discharged alive. The number of persons dying within 1 year of the index PTCA was 72 deaths per 1,000 procedures.

Of 1,000 persons discharged alive, 267 had one readmission or more for any cause within 90 days of discharge. The number of persons with one readmission or more in which an adverse event occurred was 357 per 1,000 persons discharged alive.

For both sexes combined, the rate of PTCA was highest in the age group 65-74 years (1.37 procedures per 1,000 enrollees) and declined with age. The rate of PTCA for men was more than double the rate for women (1.58 procedures per 1,000 enrollees versus 0.75). The higher rate for men was consistent across all age groups. The rate of PTCA for white persons was three times the rate for black persons (1.14 procedures per 1,000 enrollees versus 0.38). The overall pattern by age was also found for the black group and the white

group; that is, the rate of procedures per 1,000 enrollees was highest in the age group 65-74 years and declined with age. Because of the small number of procedures performed on black Medicare beneficiaries (750), age- and sex-specific rates for black persons are not discussed.

Overall, ALOS for PTCA was 7.49 days. ALOS rose with age, from 7.13 days for patients aged 65-74 years to 10.43 days for patients aged 85 years or over.

For all persons combined, the rate of adverse events in the index stay increased with age. Women had a higher rate of adverse events in the index stay than men had (172 versus 149 persons per 1,000 procedures). The rates of adverse events during the index stay for white persons and black persons were essentially the same (158 and 161 persons per 1,000 procedures, respectively).

Overall, the number of persons dying within 1 year of a PTCA increased with age, rising from 58 deaths per 1,000 PTCAs in the age group 65-74 years to 230 deaths per 1,000 PTCAs for persons 85 years or over. Men and women both experienced 72 deaths per 1,000 procedures within 1 year. The 1-year death rate was lower for white persons than black persons, 71 deaths per 1,000 versus 95 deaths per 1,000.

The number of persons with one readmission or more for any cause within 90 days of discharge increased with age for all subgroups. Overall, women had a higher 90-day readmission rate for any cause than men had (283 persons per 1,000 discharged alive for women versus 256 for men). There was essentially no difference in the 90-day readmission rate between black persons (267 persons per 1,000 live discharges) and white persons (268 per 1,000).

The right side of Tables 2-4 contains readmission rates for the eight event groups shown in Table 1. An additional category is shown in the last column: the sum of CABG procedures performed in the index PTCA stay and CABGs performed during readmission following an index PTCA. This information is useful for analyzing the total rate of CABG following initial PTCAs.

The total number of readmissions for adverse events following PTCA was 558 per 1,000 persons discharged alive. Total readmissions increased with age, were higher for women than men, and were similar for black and white persons.

Event Group 1, angina, AMI, and other acute and subacute ischemic heart disease, was responsible for 129 readmissions per 1,000 persons discharged alive. For this event group, the rate of readmissions increased with age, women had more readmissions than men, and black persons had a higher readmission rate than white persons.

The rate of readmissions for Event Group 2, other cardiac events, also increased markedly with age. Women had more readmissions for this event group than men had, and black persons were readmitted more often than white persons.

The readmission rates for Event Groups 3 (noncardiac vascular events) and 4 (infections) were relatively low, and there was little difference in readmission rates between men and women. White persons had higher readmission rates than black persons for both event groups. For Event Group 3, the readmission rates for white persons and black persons were 14 per 1,000 live discharges versus 8. For Event Group 4, the readmission rates were 7 per 1,000 live discharges for white persons and 3 per 1,000 for black persons.

Readmission rates for Event Group 5, cardiac catheterization without revascularization, declined with age for all persons combined. Women were readmitted more frequently for this event group than men, and black persons were readmitted more frequently than white persons.

Readmissions for subsequent PTCA (Event Group 6) were most frequent in the age group 65-74 years and least frequent in the group 75-84 years. Men had more readmissions for this event group than women, and white persons were readmitted more frequently than black persons.

Readmissions for subsequent CABG (Event Group 7) declined with age for both men and women. Men had more readmissions than women for this event group, and white persons had more readmissions than black persons.

The readmission rates for Event Group 8, other events, were relatively low. The overall rate was only 10 per 1,000 persons discharged alive. The rates varied little by age, sex, or race.

A total of 105 CABGs were performed per 1,000 PTCAs. As noted earlier, both CABGs performed in the index PTCA stay and CABGs performed in readmissions are included.

Variations by geographic area

Tables 3 and 4 contain data on adverse events following PTCA by geographic area. Data by metropolitan and rural areas within each State are shown in Table 3, and data by metropolitan statistical area (MSA) are shown in Table 4. Figures 1-4 were derived from the data in these tables.

Tables 3 and 4 contain data for the same measures that are shown by age, sex, and race in Table 2. Data for areas in which the rate was significantly different from the national average are annotated with a "+" or "-" if the local rate was

different at the $p = 0.05$ level and with a “++” or “--” if the local rate was different at the $p = 0.01$ level. Details on the statistical tests are contained in the appendix.

ALOS was highest in the Northeast (8.73 days) and lowest in the West (5.96 days). Rhode Island had the highest ALOS (11.13 days) and Idaho the lowest (5.13 days).

Among the four U.S. census regions, the number of persons with one event or more during the index stay per 1,000 procedures ranged from 146 persons per 1,000 procedures in the North Central Region to 185 in the West, with intermediate rates of 153 in the South and 157 in the Northeast. Among the States, the rates ranged from 79 persons per 1,000 procedures in Maine to 293 in Washington. As discussed in the introduction, rates of adverse events in the index stay may reflect variations in coding completeness across areas. Thus, the differences need to be viewed with caution.

The number of persons dying within 1 year of PTCA per 1,000 procedures was the same in three of the four census regions. In the North Central, South, and West Regions, 74 persons per 1,000 procedures died within 1 year of PTCA; in the Northeast, this rate was 59. Among States, the death rates within 1 year after a PTCA ranged from 0 death per 1,000 procedures in North Dakota and Alaska and 9 deaths in Idaho to 143 deaths per 1,000 procedures in Vermont. Although Vermont had the highest rate, it was not statistically different from the national average. The next highest States that were statistically different from the national average were Missouri and Louisiana, each with 97 deaths per 1,000 procedures within a year of PTCA.

The number of persons with one readmission or more for any cause within 90 days per 1,000 persons discharged alive is presented to give an idea of the magnitude of the readmission rate for any reason after PTCA. At the regional level, this rate varied little, from 265 persons per 1,000 live discharges in the Northeast to 269 in the South. Among States, the 90-day readmission rate ranged from 184 persons per 1,000 live discharges in Maine to 380 in New Hampshire. Alaska had a rate of 0 readmission in 90 days per 1,000 persons discharged alive; however, this is based on few index cases. Additionally, neither Maine nor New Hampshire was statistically different from the national average. Idaho and Montana, with rates of 186 and 350, respectively, were the next lowest and next highest States that were statistically different from the national average.

Among the regions, the number of persons with one readmission or more with a potentially adverse

event per 1,000 persons discharged alive ranged from 341 in the West to 370 in the South.

The right side of Table 3 contains readmission data for the event groups shown in Table 2. Figure 1 is a map showing variations in the total readmission rates for adverse events per 1,000 persons discharged alive. A large number of States with low rates are located in the West Region, particularly the Rocky Mountain area; States with higher rates tend to be located in the East.

As can be seen in the map for Event Group 1, angina, AMI, and other acute and subacute ischemic heart disease (Figure 2), the States with higher rates are concentrated in the Northeast. States with the lowest readmission rates are primarily in the Western United States.

As mentioned earlier, Event Group 6, subsequent PTCA, was the most frequently reported reason for readmission. Among the four census regions, the readmission rate for this event group ranged from 128 per 1,000 live discharges in the Northeast to 148 in the West. None of the census regions was statistically different from the national average. States with low readmission rates for subsequent PTCA and those with high rates were both scattered throughout the country (Figure 3).

Variations in rates for total CABGs (CABGs performed in the index stay and subsequent CABGs) are shown in Figure 4. The East had the highest concentration of States with low subsequent CABG rates. States with high rates were scattered throughout the country, although several contiguous States in the North Central Region had high rates. Among the four census regions, the rate ranged from a high of 112 CABGs per 1,000 PTCAs in the West to 90 per 1,000 in the Northeast. The highest rate in any State was 230 in Nevada, and the lowest was 51 in West Virginia.

Urban-rural patterns

The national rate of adverse events following PTCA tended to be similar for urban and rural areas. The only exceptions were Event Group 1, angina, AMI, and other acute and subacute ischemic heart disease, and Event Group 2, other cardiac events, for which rural readmission rates were higher than rates in urban areas.

Correlations between rates

Table 4 contains data on rates of potentially adverse events during the index stay and in readmissions by MSA. A number of correlations were performed to examine the relationship between measures across MSAs. A correlation was

performed between the rate of persons with an event in the index stay and the rate of persons readmitted with an event identified as potentially adverse. The correlation was small and not significant. The correlation between persons dying within a year and persons readmitted with an event identified as potentially adverse was also small and not significant.

Correlations were performed between deaths within a year of surgery and readmissions for various causes: Event Group 1 (angina, AMI, and other acute and subacute ischemic heart disease); Event Group 6 (subsequent PTCA); and total CABGs (whether performed in the index stay or in a readmission). The only significant correlation (-0.30) was between Event Group 1 and deaths within a year. An additional correlation between the rates of readmissions for PTCA and readmissions for CABG across areas was small and not significant.

Correlations were performed between ALOS and rates of events in the index stay and between ALOS and rates of persons with readmissions. This was done to examine the hypothesis that areas with high ALOS might have high rates of events within the index stay because of the longer time for adverse events to appear. Areas with high ALOS might also have lower rates of readmissions because more problems would be taken care of during the index stay. For PTCA, the correlations across MSAs between ALOS and rates of adverse events in the index stay were small and not significant. The correlation between ALOS and the rate of persons with a readmission within 90 days for any reason was small and not significant, and the correlation between ALOS and the rate of persons with readmissions for adverse events was also small and not significant.

Table 1. Percutaneous transluminal coronary angioplasty: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986-87 index stays (Number of procedures: 28,817. Number of live discharges: 28,000. Percutaneous transluminal coronary angioplasty must include ICD-9-CM principal procedure code 36.01 or 36.02 in any position. Stays are excluded if the following procedure codes are in any position: 35.0-35.7, 38.12, or 37.6. Stays are also excluded if the following diagnosis codes are in any position: 443.89, 443.9, or 414.1.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmissions within(1)		
Total	--	--	--	193.57	558.18
1. Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease(2)	--	--	--	--	128.96
Acute myocardial infarction	410	No	1 year	--	18.89
Other acute and subacute forms of ischemic heart disease	411	No	1 year	--	80.54
Angina pectoris	413	No	1 year	--	29.54
2. Other cardiac events(2)	--	--	--	44.94	80.54
Malignant hypertensive heart disease with congestive heart failure	402.01	No	1 year	--	0.00
Benign hypertensive heart disease with congestive heart failure	402.11	No	1 year	--	0.29
Unspecified hypertensive heart disease with congestive heart failure	402.91	No	1 year	--	1.21
Other and unspecified acute pericarditis	420.9	No	1 year	--	0.86
Other diseases of pericardium	423	No	1 year	--	0.71
Conduction disorders	426	No	1 year	--	1.89
Cardiac dysrhythmias	427	No	1 year	--	30.29
Heart failure	428	No	1 year	--	42.96
Functional disturbances following cardiac surgery	429.4	No	1 year	--	1.71
Mechanical complication of cardiac device, implant, and graft due to coronary bypass graft	996.03	Yes	1 year	15.69	0.11
Cardiac complications during or resulting from a procedure	997.1	Yes	1 year	29.25	0.50

(1)Measured from date of surgery to date of readmission.

(2)For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3)Beginning Oct. 1, 1987, procedure code 36.05 is also included.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1. Percutaneous transluminal coronary angioplasty: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986-87 index stays (Number of procedures: 28,817. Number of live discharges: 28,000. Percutaneous transluminal coronary angioplasty must include ICD-9-CM principal procedure code 36.01 or 36.02 in any position. Stays are excluded if the following procedure codes are in any position: 35.0-35.7, 38.12, or 37.6. Stays are also excluded if the following diagnosis codes are in any position: 443.89, 443.9, or 414.1.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmissions within(1)		
3. Noncardiac vascular events(2)	--	--	--	3.78	13.68
Defibrination syndrome	286.6	No	30 days	--	0.00
Pulmonary embolism and infarction	415.1	No	30 days	--	1.32
Subarachnoid hemorrhage	430	No	30 days	--	0.00
Intracerebral hemorrhage	431	No	30 days	--	0.11
Other and unspecified intracranial hemorrhage	432	No	30 days	--	0.04
Occlusion and stenosis of precerebral arteries	433	No	30 days	--	1.07
Occlusion of cerebral arteries	434	No	30 days	--	0.86
Acute, but ill-defined, cerebrovascular disease	436	No	30 days	--	0.39
Other generalized ischemic cerebrovascular disease	437.1	No	30 days	--	0.04
Arterial embolism and thrombosis	444	No	1 year	--	4.21
Phlebitis and thrombophlebitis	451	No	30 days	--	1.07
Other venous embolism and thrombosis of unspecified site	453.9	No	30 days	--	0.07
Hypotension	458	No	1 year	--	3.21
Peripheral vascular complications	997.2	Yes	1 year	3.12	1.21
Other vascular complications	999.2	Yes	30 days	0.66	0.07

(1) Measured from date of surgery to date of readmission.

(2) For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3) Beginning Oct. 1, 1987, procedure code 36.05 is also included.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1. Percutaneous transluminal coronary angioplasty: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986-87 index stays (Number of procedures: 28,817. Number of live discharges: 28,000. Percutaneous transluminal coronary angioplasty must include ICD-9-CM principal procedure code 36.01 or 36.02 in any position. Stays are excluded if the following procedure codes are in any position: 35.0-35.7, 38.12, or 37.6. Stays are also excluded if the following diagnosis codes are in any position: 443.89, 443.9, or 414.1.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmissions within(1)		
4. Infections(2)	--	--	--	9.54	6.54
Septicemia	038	No	60 days	--	1.14
Viral hepatitis B with hepatic coma	070.2	No	1 year	--	0.04
Viral hepatitis B without mention of hepatic coma	070.3	No	1 year	--	0.11
Other specified viral hepatitis with hepatic coma	070.4	No	1 year	--	0.00
Other specified viral hepatitis without mention of hepatic coma	070.5	No	1 year	--	0.00
Unspecified viral hepatitis with hepatic coma	070.6	No	1 year	--	0.00
Unspecified viral hepatitis without mention of hepatic coma	070.9	No	1 year	--	0.04
Acute bronchitis and bronchiolitis	466	No	30 days	--	0.43
Pneumococcal pneumonia	481	No	30 days	--	0.04
Other bacterial pneumonia	482	No	30 days	--	0.25
Bronchopneumonia, organism unspecified	485	No	30 days	--	0.00
Pneumonia, organism unspecified	486	No	30 days	--	1.39
Hepatitis, unspecified	573.3	No	1 year	--	0.25
Acute pyelonephritis	590.1	No	30 days	--	0.18
Other pyelonephritis or pyonephrosis, not specified as acute or chronic	590.8	No	30 days	--	0.00
Infection of kidney, unspecified	590.9	No	30 days	--	0.00
Acute cystitis	595.0	No	30 days	--	0.04
Cystitis, unspecified	595.9	No	30 days	--	0.04
Urinary tract infection, site not specified	599.0	No	30 days	--	0.64
Other cellulitis and abscess, neck	682.1	No	30 days	--	0.00
Other cellulitis and abscess, trunk	682.2	No	30 days	--	0.00
Other cellulitis and abscess, leg, except foot	682.6	No	30 days	--	0.11
Other cellulitis and abscess, unspecified site	682.9	No	30 days	--	0.00
Bacteremia, unspecified	790.7	No	30 days	--	0.00
Infection and inflammatory reaction due to internal prosthetic device, implant, and graft	996.6	Yes	1 year	1.35	0.50
Respiratory complications	997.3	Yes	30 days	4.48	0.18
Disruption of operation wound	998.3	Yes	30 days	0.42	0.21
Postoperative infection	998.5	Yes	60 days	2.71	0.89
Other infection	999.3	Yes	30 days	0.59	0.07

(1) Measured from date of surgery to date of readmission.

(2) For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3) Beginning Oct. 1, 1987, procedure code 36.05 is also included.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1. Percutaneous transluminal coronary angioplasty: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986-87 index stays (Number of procedures: 28,817. Number of live discharges: 28,000. Percutaneous transluminal coronary angioplasty must include ICD-9-CM principal procedure code 36.01 or 36.02 in any position. Stays are excluded if the following procedure codes are in any position: 35.0-35.7, 38.12, or 37.6. Stays are also excluded if the following diagnosis codes are in any position: 443.89, 443.9, or 414.1.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmissions within(1)		
5. Cardiac catheterization without revascularization	--	--	--	--	--
Cardiac catheterization without revascularization	37.21-37.23 or 88.52-88.58	No	1 year	--	117.68
6. Subsequent percutaneous transluminal coronary angioplasty	--	--	--	--	--
Percutaneous transluminal coronary angioplasty	36.01 or 36.02(3)	Yes	1 year	12.84	139.64
7. Subsequent coronary artery bypass graft	--	--	--	--	--
Coronary artery bypass graft	Diagnosis-related group 106 or 107	Yes	1 year	45.04	61.46

(1) Measured from date of surgery to date of readmission.

(2) For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3) Beginning Oct. 1, 1987, procedure code 36.05 is also included.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1. Percutaneous transluminal coronary angioplasty: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986-87 index stays (Number of procedures: 28,817. Number of live discharges: 28,000. Percutaneous transluminal coronary angioplasty must include ICD-9-CM principal procedure code 36.01 or 36.02 in any position. Stays are excluded if the following procedure codes are in any position: 35.0-35.7, 38.12, or 37.6. Stays are also excluded if the following diagnosis codes are in any position: 443.89, 443.9, or 414.1.)

Event	ICD-9-CM code	Included if occurs in:		Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
		Index stay	Readmissions within(1)		
8. Other events(2)	--	--	--	77.42	9.68
Disorders of fluid, electrolyte, and acid-base balance	276	No	30 days	--	0.93
Iron deficiency anemias	280	No	30 days	--	0.21
Other and unspecified anemias	285	No	30 days	--	0.18
Unspecified transient organic mental disorder	293.9	No	1 year	--	0.00
Anoxic brain damage	348.1	No	30 days	--	0.00
Bronchitis, not specified as acute or chronic	490	No	30 days	--	0.00
Chronic bronchitis	491	No	30 days	--	0.07
Emphysema	492	No	30 days	--	0.04
Asthma	493	No	30 days	--	0.29
Bronchiectasis	494	No	30 days	--	0.00
Unspecified pleural effusion	511.9	No	1 year	--	1.61
Acute edema of lung, unspecified	518.4	No	30 days	--	0.25
Pulmonary insufficiency following trauma and surgery	518.5	No	30 days	--	0.07
Respiratory failure	518.81	No	30 days	--	0.00
Acute gastric ulcer with hemorrhage	531.0	No	30 days	--	0.07
Acute gastric ulcer with perforation	531.1	No	30 days	--	0.00
Acute gastric ulcer with hemorrhage and perforation	531.2	No	30 days	--	0.00
Chronic or unspecified gastric ulcer with hemorrhage	531.4	No	30 days	--	0.14
Chronic or unspecified gastric ulcer with perforation	531.5	No	30 days	--	0.00
Chronic or unspecified gastric ulcer with hemorrhage and perforation	531.6	No	30 days	--	0.00
Acute duodenal ulcer with hemorrhage	532.0	No	30 days	--	0.11
Acute duodenal ulcer with perforation	532.1	No	30 days	--	0.00
Acute duodenal ulcer with hemorrhage and perforation	532.2	No	30 days	--	0.00
Chronic or unspecified duodenal ulcer with hemorrhage	532.4	No	30 days	--	0.29
Chronic or unspecified duodenal ulcer with perforation	532.5	No	30 days	--	0.04
Chronic or unspecified duodenal ulcer with hemorrhage and perforation	532.6	No	30 days	--	0.00
Acute peptic ulcer with hemorrhage, site unspecified	533.0	No	30 days	--	0.04

(1)Measured from date of surgery to date of readmission.

(2)For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3)Beginning Oct. 1, 1987, procedure code 36.05 is also included.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1. Percutaneous transluminal coronary angioplasty: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986-87 index stays (Number of procedures: 28,817. Number of live discharges: 28,000. Percutaneous transluminal coronary angioplasty must include ICD-9-CM principal procedure code 36.01 or 36.02 in any position. Stays are excluded if the following procedure codes are in any position: 35.0-35.7, 38.12, or 37.6. Stays are also excluded if the following diagnosis codes are in any position: 443.89, 443.9, or 414.1.)

Event	ICD-9-CM code	Index stay	Included if occurs in:	Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
			Readmissions within(1)		
Acute peptic ulcer with perforation, site unspecified	533.1	No	30 days	--	0.00
Acute peptic ulcer with hemorrhage and perforation, site unspecified	533.2	No	30 days	--	0.00
Chronic or unspecified peptic ulcer with hemorrhage, site unspecified	533.4	No	30 days	--	0.07
Chronic or unspecified peptic ulcer with perforation, site unspecified	533.5	No	30 days	--	0.00
Chronic or unspecified peptic ulcer with hemorrhage and perforation, site unspecified	533.6	No	30 days	--	0.00
Acute gastrojejunal ulcer with hemorrhage	534.0	No	30 days	--	0.00
Acute gastrojejunal ulcer with perforation	534.1	No	30 days	--	0.00
Acute gastrojejunal ulcer with hemorrhage and perforation	534.2	No	30 days	--	0.00
Chronic or unspecified gastrojejunal ulcer with hemorrhage	534.4	No	30 days	--	0.00
Chronic or unspecified gastrojejunal ulcer with perforation	534.5	No	30 days	--	0.00
Chronic or unspecified gastrojejunal ulcer with hemorrhage and perforation	534.6	No	30 days	--	0.00
Other impaction of intestine	560.39	No	30 days	--	0.00
Acute and subacute necrosis of liver	570	No	1 year	--	0.07
Acute renal failure	584	No	30 days	--	0.29
Renal failure, unspecified	586	No	30 days	--	0.11
Trigonitis	595.3	No	30 days	--	0.00
Decubitus ulcer	707.0	No	30 days	--	0.00
Shock without mention of trauma	785.5	No	1 year	--	0.50
Retention of urine	788.2	No	30 days	--	0.21
Incontinence of urine	788.3	No	30 days	--	0.04
Respiratory arrest	799.1	No	30 days	--	0.04
Other complications of internal prosthetic device, implant, and graft	996.7	Yes	1 year	16.38	1.54
Central nervous system complications during or resulting from a procedure	997.0	Yes	1 year	1.46	0.07
Gastrointestinal complications	997.4	Yes	30 days	0.90	0.04
Urinary complications	997.5	Yes	30 days	3.09	0.04
Postoperative shock	998.0	Yes	30 days	0.76	0.00

(1)Measured from date of surgery to date of readmission.

(2)For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3)Beginning Oct. 1, 1987, procedure code 36.05 is also included.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 1. Percutaneous transluminal coronary angioplasty: Definition of adverse events and rate of events for aged Medicare enrollees: United States, 1986-87 index stays (Number of procedures: 28,817. Number of live discharges: 28,000. Percutaneous transluminal coronary angioplasty must include ICD-9-CM principal procedure code 36.01 or 36.02 in any position. Stays are excluded if the following procedure codes are in any position: 35.0-35.7, 38.12, or 37.6. Stays are also excluded if the following diagnosis codes are in any position: 443.89, 443.9, or 414.1.)

Event	ICD-9-CM code	Index stay	Included if occurs in:	Number of events per 1,000 procedures during index stay	Number of readmissions with an event per 1,000 live discharges
			Readmis- sions within(1)		
Hemorrhage or hematoma complicating a procedure	998.1	Yes	30 days	43.76	1.21
Accidental puncture or laceration during a procedure	998.2	Yes	30 days	6.25	0.18
Foreign body accidentally left during a procedure	998.4	Yes	1 year	0.10	0.04
Acute reaction to foreign substance accidentally left during a procedure	998.7	Yes	1 year	0.00	0.00
Other specified complications of procedures, not elsewhere classified	998.8	Yes	1 year	4.16	0.93
Unspecified complication of procedure, not elsewhere classified	998.9	Yes	30 days	0.24	0.00
Air embolism	999.1	Yes	30 days	0.03	0.00
ABO incompatibility reaction	999.6	Yes	30 days	0.00	0.00
Rh incompatibility reaction	999.7	Yes	30 days	0.00	0.00
Other transfusion reaction	999.8	Yes	30 days	0.28	0.00

(1) Measured from date of surgery to date of readmission.

(2) For all readmissions with both a procedure code and a diagnosis code qualifying as events, the procedure code is used to define the event.

(3) Beginning Oct. 1, 1987, procedure code 36.05 is also included.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. ICD-9-CM is International Classification of Diseases, 9th Revision, Clinical Modification.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986-87 index stays

Race, sex, and age	Index stay					Number of persons discharged alive	Within 90 days for any cause	With an event
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures			
All persons(4)	28,817	1.08	7.49	159	72	28,000	267	357
65-74 years	22,071	1.37	7.13	159	58	21,592	259	353
75-84 years	6,367	0.79	8.59	155	110	6,070	293	365
85 years or over	379	0.15	10.43	182	230	338	355	441
Men	16,843	1.58	6.98	149	72	16,415	256	344
65-74 years	13,400	1.90	6.72	150	59	13,125	246	340
75-84 years	3,283	1.13	7.91	144	114	3,143	295	354
85 years or over	160	0.23	9.81	156	244	147	313	469
Women	11,974	0.75	8.21	172	72	11,585	283	375
65-74 years	8,671	0.95	7.75	174	56	8,467	278	373
75-84 years	3,084	0.60	9.31	167	107	2,927	291	377
85 years or over	219	0.12	10.89	201	219	191	387	419
White	26,837	1.14	7.42	158	71	26,071	268	357
65-74 years	20,519	1.44	7.04	159	57	20,072	258	353
75-84 years	5,962	0.84	8.53	156	110	5,683	294	366
85 years or over	356	0.16	10.45	185	236	316	361	440
Men	15,751	1.68	6.92	148	71	15,342	257	345
65-74 years	12,532	2.02	6.66	149	59	12,268	246	340
75-84 years	3,068	1.19	7.86	144	112	2,936	297	357
85 years or over	151	0.25	9.75	152	245	138	326	471
Women	11,086	0.78	8.12	173	72	10,729	283	374
65-74 years	7,987	1.00	7.64	173	55	7,804	278	373
75-84 years	2,894	0.63	9.25	169	107	2,747	292	375
85 years or over	205	0.13	10.96	210	229	178	388	416

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

(3) Includes index stay and readmissions.

(4) Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Race, sex, and age	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease			Noncardiac vascular events	Infec- tions	Cardiac catheter- ization without revascular- ization		Subsequent PTCA(1)	Subsequent CABG(2)	Other	Number of CABGs(2) per 1,000 procedures(3)
		129	81	14			118	140				
All persons(4)	558	129	81	14	14	7	118	140	61	10	10	105
65-74 years	550	118	71	13	13	6	121	146	66	9	9	112
75-84 years	581	162	108	17	17	7	109	118	49	11	11	84
85 years or over	698	260	183	9	9	15	71	133	18	9	9	34
Men	528	106	70	13	13	7	107	147	69	9	9	111
65-74 years	523	95	64	12	12	7	110	154	72	8	8	116
75-84 years	538	139	93	17	17	7	92	119	61	10	10	94
85 years or over	762	333	150	0	0	7	95	143	27	7	7	50
Women	601	162	95	14	14	6	133	129	50	11	11	96
65-74 years	591	153	82	14	14	5	137	134	56	11	11	105
75-84 years	627	187	124	16	16	8	126	117	36	13	13	74
85 years or over	649	204	209	16	16	21	52	126	10	10	10	23
White	559	129	80	14	14	7	117	140	62	10	10	105
65-74 years	549	117	70	13	13	7	120	147	67	10	10	112
75-84 years	585	165	111	17	17	7	109	117	49	11	11	84
85 years or over	699	250	193	9	9	16	63	139	19	9	9	34
Men	530	106	69	13	13	7	106	148	71	9	9	112
65-74 years	522	95	61	12	12	7	110	155	73	9	9	117
75-84 years	547	142	98	17	17	7	93	118	62	10	10	94
85 years or over	783	333	152	0	0	7	101	152	29	7	7	46
Women	600	161	95	15	15	6	132	129	50	11	11	96
65-74 years	590	151	82	14	14	5	137	134	57	11	11	106
75-84 years	626	189	124	17	17	7	126	116	35	12	12	73
85 years or over	635	185	225	17	17	22	34	129	11	11	11	24

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

(4)Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986-87 index stays

Race, sex, and age	Index stay					Number of persons			Number of persons with 1 readmission or more per 1,000 live discharges
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause		
Black	750	0.38	9.87	161	95	730	267	359	
65-74 years	587	0.48	9.53	167	75	574	256	362	
75-84 years	149	0.26	11.34	148	168	143	301	343	
85 years or over	14	0.07	8.79	71	143	13	385	385	
Men	367	0.46	9.22	161	93	362	260	331	
65-74 years	287	0.55	8.80	164	77	283	251	336	
75-84 years	75	0.35	10.87	147	147	74	297	311	
85 years or over	5	0.09	8.20	200	200	5	200	400	
Women	383	0.32	10.50	162	97	368	274	386	
65-74 years	300	0.43	10.22	170	73	291	261	388	
75-84 years	74	0.20	11.81	149	189	69	304	377	
85 years or over	9	0.07	9.11	0	111	8	500	375	

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

(4)Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 2. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by race, sex, and age: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Race, sex, and age	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease				Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other	Number of CABGs(2) per 1,000 procedures(3)
		myocardial infarction, and other acute and subacute ischemic heart disease	myocardial infarction, and other acute and subacute ischemic heart disease	myocardial infarction, and other acute and subacute ischemic heart disease	myocardial infarction, and other acute and subacute ischemic heart disease								
Black	568	145	108	8	3	134				127	36	7	79
65-74 years	591	145	124	7	0	132				146	31	5	78
75-84 years	497	154	49	14	14	133				63	56	14	87
85 years or over	385	77	77	0	0	231				0	0	0	0
Men	506	97	124	6	3	122				119	28	8	65
65-74 years	544	92	148	7	0	127				141	21	7	66
75-84 years	365	108	27	0	14	108				41	54	14	67
85 years or over	400	200	200	0	0	0				0	0	0	0
Women	630	193	92	11	3	147				136	43	5	91
65-74 years	636	196	100	7	0	137				151	41	3	90
75-84 years	638	203	72	29	14	159				87	58	14	108
85 years or over	375	0	0	0	0	375				0	0	0	0

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

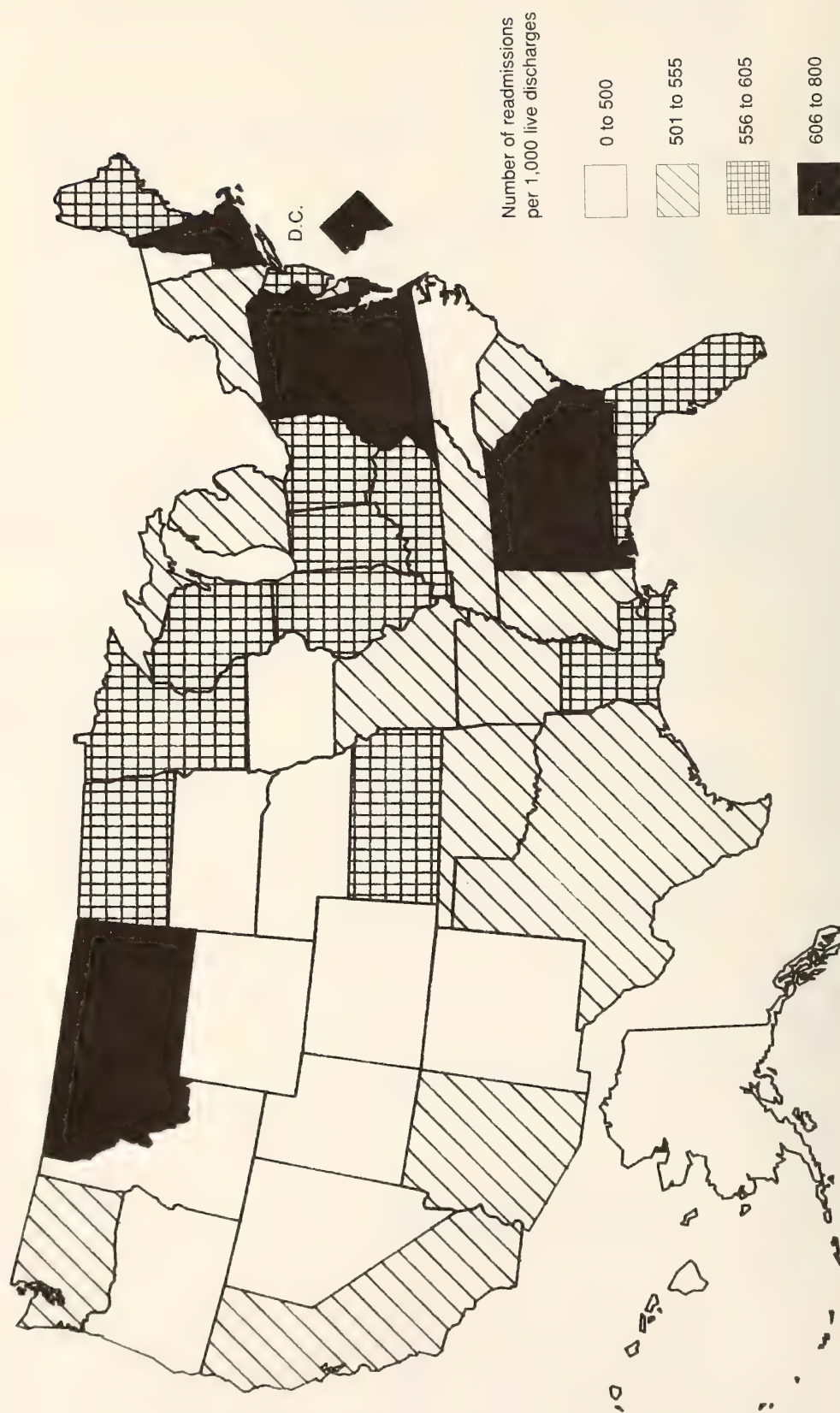
(3)Includes index stay and readmissions.

(4)Includes persons of other races in addition to white and black persons.

NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.

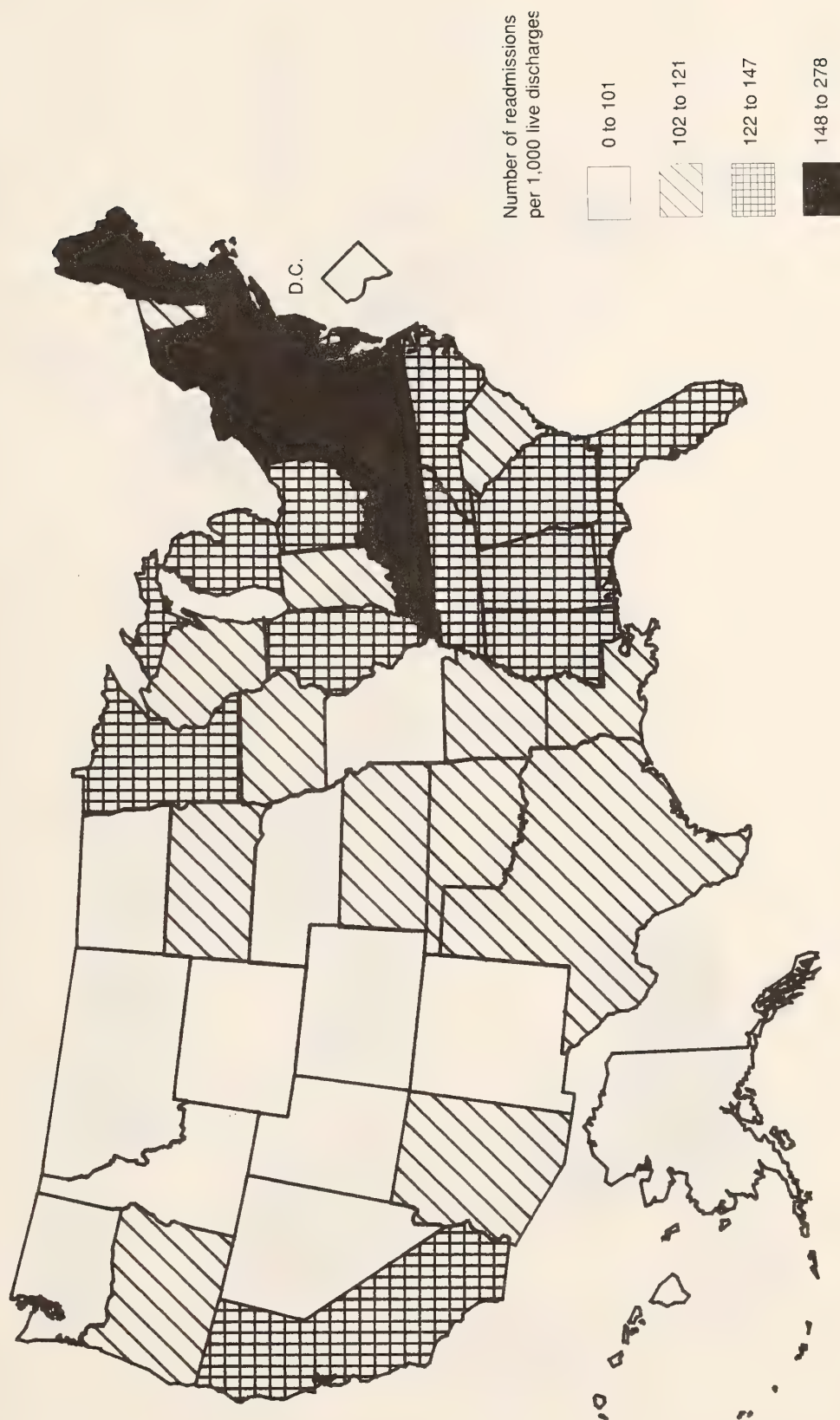
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 1. Percutaneous transluminal coronary angioplasty: Number of readmissions with an adverse event per 1,000 live discharges for aged Medicare enrollees, by State: 1986-87 index stays



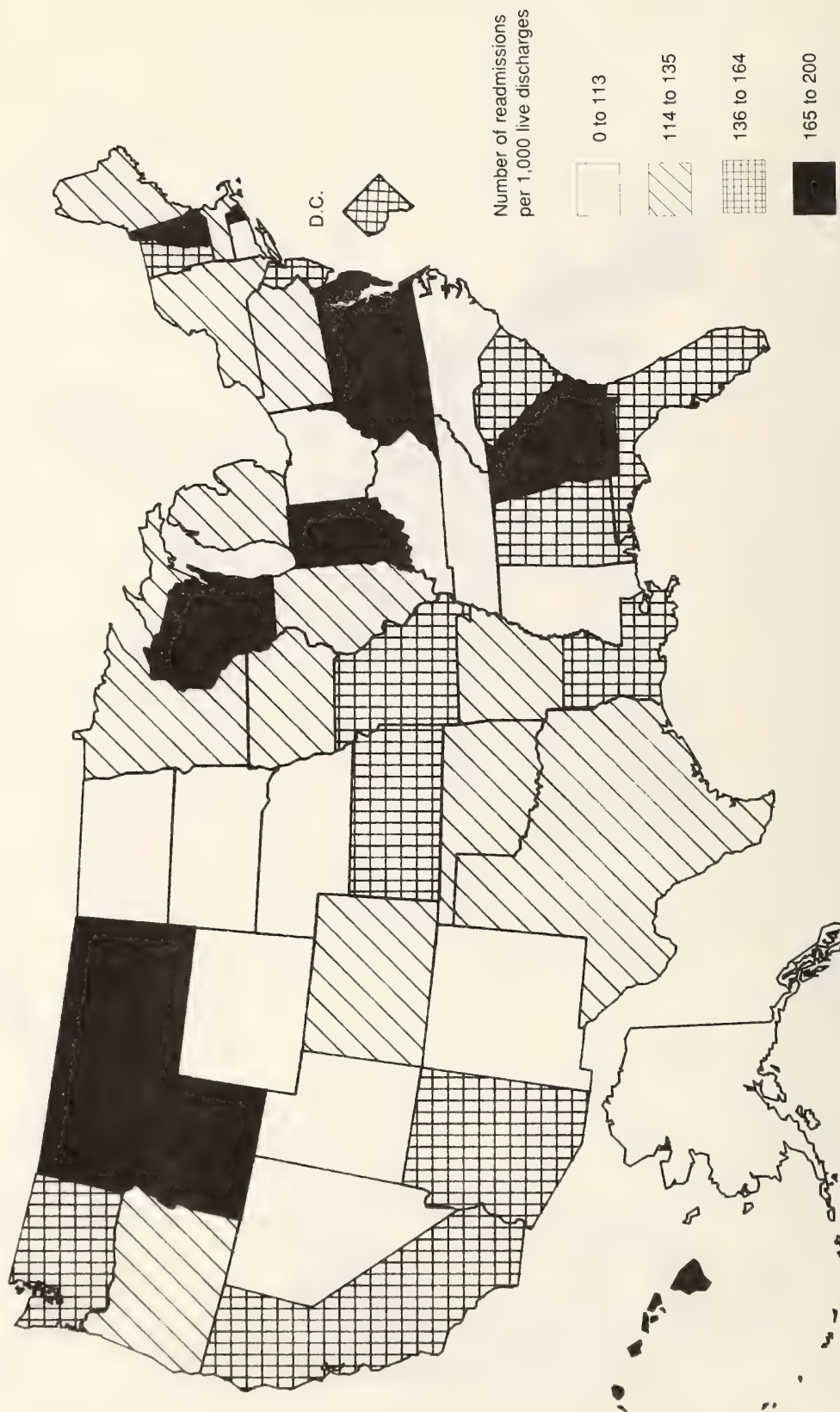
NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy; Data from the Medicare Statistical System.

Figure 2. Percutaneous transluminal coronary angioplasty: Number of readmissions with an adverse event in Event Group 1 (angina, acute myocardial infarction, and other acute and subacute ischemic heart disease) per 1,000 live discharges for aged Medicare enrollees, by State: 1986-87 index stays



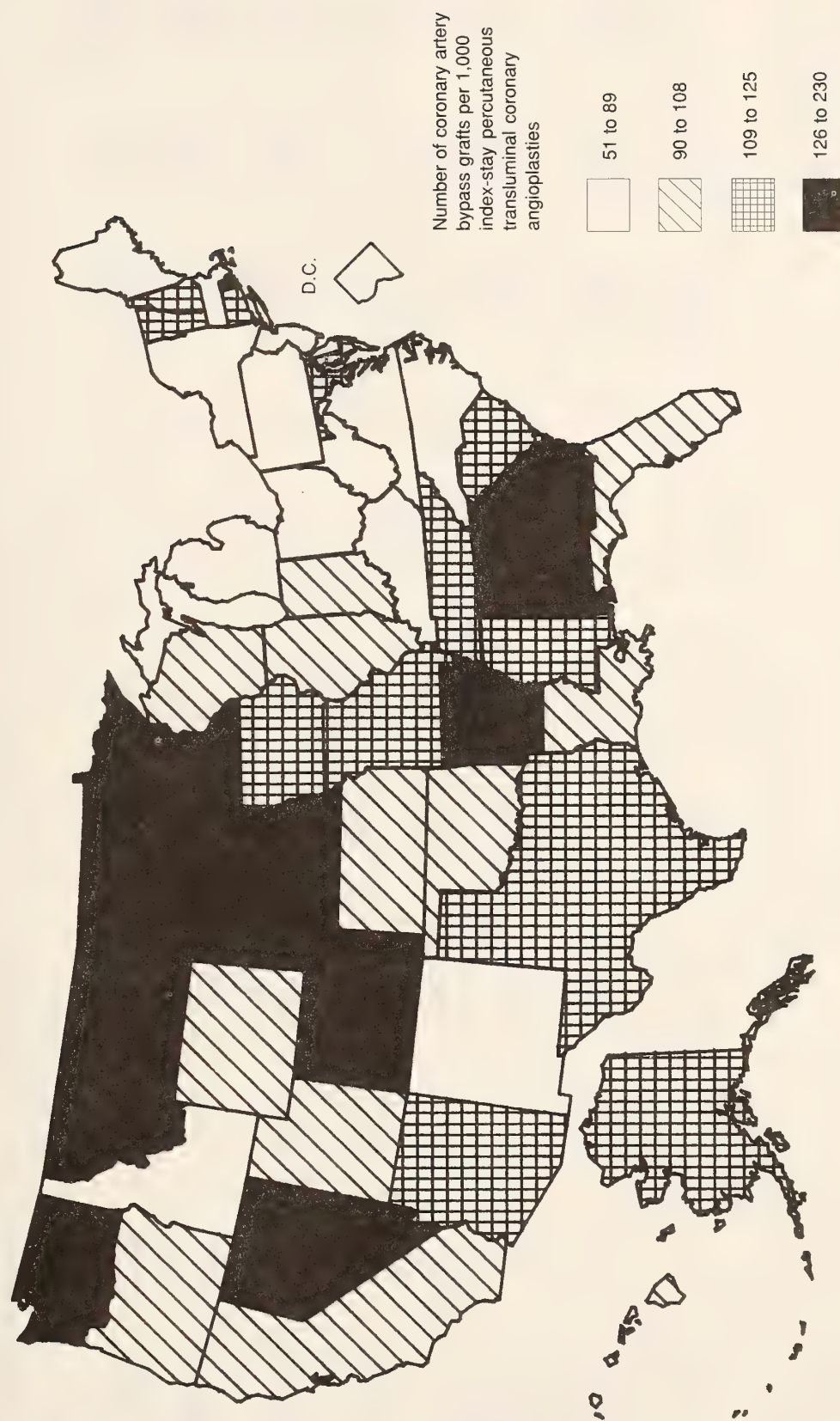
NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 3. Percutaneous transluminal coronary angioplasty: Number of readmissions with an adverse event in Event Group 6 (subsequent percutaneous transluminal coronary angioplasty) per 1,000 live discharges for aged Medicare enrollees, by State: 1986-87 index stays



NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Figure 4. Percutaneous transluminal coronary angioplasty: Number of coronary artery bypass grafts in the index stay or in a readmission per 1,000 index-stay percutaneous transluminal coronary angioplasties for aged Medicare enrollees, by State: 1986-87 index stays



NOTE: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included.
SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy. Data from the Medicare Statistical System.

Table 3. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
United States	28,817	1.08	7.49	159	72	28,000	267	357
Metropolitan	20,900	1.08	7.54	160	73	20,305	266	353
Rural	7,917	1.08	7.36	155	68	7,695	271	365
Northeast	3,898	0.62--	8.73	157	59--	3,822	265	357
Metropolitan	3,473	0.62--	8.83	158	60--	3,405	266	358
Rural	425	0.60--	7.85	151	47-	417	257	350
New England	964	0.61--	9.17	192++	62	946	280	373
Metropolitan	852	0.63--	9.23	195++	62	836	283	378
Rural	112	0.49--	8.68	170	63	110	255	336
Maine	76	0.50--	6.55	79--	13	76	184	355
Metropolitan	38	0.46--	6.32	79	26	38	184	421
Rural	38	0.54--	6.79	79	0	38	184	289
New Hampshire	51	0.44--	10.27	235	39	50	380	480
Metropolitan	37	0.50--	8.30	162	0	37	351	459
Rural	14	0.34--	15.50	429	143	13	462	538
Vermont	35	0.56--	8.11	257	143	33	303	303
Metropolitan	8	0.77	9.00	500	125	7	286	286
Rural	27	0.52--	7.85	185	148	26	308	308
Massachusetts	418	0.59--	9.71	211++	69	407	295	371
Metropolitan	389	0.59--	9.75	213++	72	378	299	373
Rural	29	0.57--	9.10	172	34	29	241	345

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges										
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent		Other	Number of CABGs(2) per 1,000 procedures(3)
							PTCA(1)	CABG(2)		
United States	558	129	81	14	7	118	140	61	10	105
Metropolitan	551	125	78	14	6	117	140	61	10	105
Rural	576	139+	86	14	7	120	138	62	10	105
Northeast	593+	172++	79	13	8	126	128	56	11	90--
Metropolitan	592+	169++	79	13	7	128	127	58	10	92--
Rural	604	194++	82	17	12	113	129	43	14	78-
New England	649++	216++	85	15	6	124	134	59	11	103
Metropolitan	657++	217++	84	16	6	123	139	65	8	108
Rural	591	209	91	9	9	127	100	18	27	63
Maine	605	184	118	0	0	145	118	26	13	66
Metropolitan	684	211	132	0	0	132	158	26	26	53
Rural	526	158	105	0	0	158	79	26	0	79
New Hampshire	800	240	80	20	0	140	200	80	40	118
Metropolitan	784	216	81	0	0	108	270	108	0	135
Rural	846	308	77	77	0	231	0	0	154+	71
Vermont	424	121	30	0	0	0-	152	61	61	114
Metropolitan	429	143	0	0	0	0	0	143	143	125
Rural	423	115	38	0	0	0	192	38	38	111
Massachusetts	683+	278++	88	20	10	96	135	49	7	86
Metropolitan	677+	272++	85	21	8	93	138	53	8	93
Rural	759	345+	138	0	34	138	103	0	0	0

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
Rhode Island	96	0.73--	11.13	177	42	96	313	344
Metropolitan	96	0.73--	11.13	177	42	96	313	344
Rural	0	0.00	0.00	0	0	0	0	0
Connecticut	288	0.73--	8.36	184	66	284	254	380
Metropolitan	284	0.74--	8.40	187	67	280	257	382
Rural	4	0.33--	5.25	0	0	4	0	250
Middle Atlantic	2,934	0.62--	8.58	145-	58--	2,876	260	352
Metropolitan	2,621	0.62--	8.70	145	60--	2,569	260	352
Rural	313	0.64--	7.55	144	42--	307	257	355
New York	1,089	0.51--	8.23	148	51--	1,070	235-	345
Metropolitan	976	0.51--	8.49	150	55-	957	232--	346
Rural	113	0.51--	6.05	133	18-	113	257	336
New Jersey	438	0.48--	8.26	158	46--	434	249	339
Metropolitan	438	0.48--	8.26	158	46--	434	249	339
Rural	0	0.00	0.00	0	0	0	0	0
Pennsylvania	1,407	0.85--	8.95	139-	67	1,372	283	362
Metropolitan	1,207	0.87--	9.04	138-	69	1,178	287	362
Rural	200	0.75--	8.40	150	55	194	258	366

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "--" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease				Cardiac catheterization without revascularization		Subsequent PTCA(1)	Subsequent CABG(2)	Other	Number of CABGs(2) per 1,000 procedures(3)
		Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization						
Rhode Island	615	177	21	0	115	167	73	0	135		
Metropolitan	615	177	21	0	115	167	73	0	135		
Rural	0	0	0	0	0	0	0	0	0		
Connecticut	623	155	11	7	173	113	74	7	122		
Metropolitan	629	157	11	7	171	114	75	7	123		
Rural	250	0	0	0	250	0	0	0	0		
Middle Atlantic	575	158++	13	8	127	126	55	11	86--		
Metropolitan	571	154++	12	7	130	124-	56	11	86--		
Rural	609	189+	20	13	107	140	52	10	83		
New York	530	150	11	7	127	117	58	9	88		
Metropolitan	531	148	11	4	131	118	61	8	91		
Rural	522	168	9	27	97	106	35	18	62		
New Jersey	590	171	12	9	115	138	53	12	89		
Metropolitan	590	171	12	9	115	138	53	12	89		
Rural	0	0	0	0	0	0	0	0	0		
Pennsylvania	606	160+	15	9	131	128	54	12	83--		
Metropolitan	597	153	13	9	134	123	53	13	81--		
Rural	660	201	26	5	113	160	62	5	95		

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
North Central	8,556	1.24++	7.72	146--	74	8,283	267	352
Metropolitan	5,479	1.25++	7.85	150	77	5,304	261	344
Rural	3,077	1.23++	7.50	140--	68	2,979	276	367
East North Central	5,541	1.17++	7.53	136--	70	5,387	264	358
Metropolitan	4,047	1.17++	7.62	144--	73	3,933	259	349
Rural	1,494	1.16++	7.31	114--	60	1,454	277	382+
Ohio	1,322	1.05	7.58	126--	68	1,285	260	360
Metropolitan	1,044	1.06	7.58	135--	77	1,013	264	349
Rural	278	1.01	7.56	94--	36--	272	246	401
Indiana	953	1.53++	7.39	89--	65	923	296	386
Metropolitan	635	1.59++	7.73	91--	71	613	274	362
Rural	318	1.42++	6.71	85--	53	310	339++	432++
Illinois	1,355	1.07	8.38	144	82	1,310	279	350
Metropolitan	993	1.04	8.45	150	82	962	275	343
Rural	362	1.16	8.17	127	83	348	287	368
Michigan	1,076	1.10	6.82	123--	72	1,054	235--	318--
Metropolitan	787	1.06	6.93	126--	74	769	237--	313--
Rural	289	1.21	6.53	114--	66	285	232	330
Wisconsin	835	1.37++	7.19	210++	55--	815	249	390+
Metropolitan	588	1.59++	7.08	233++	54	576	240	394
Rural	247	1.02	7.43	154	57	239	272	381

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges										
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease				Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other	Number of CABGs(2) per 1,000 procedures(3)
		Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization					
North Central	545	119-	13	6	116	138	60	9		102
Metropolitan	536	112--	12	6	117	138	59	8		103
Rural	562	132	14	6	114	138	63	9		101
East North Central	561	126	13	6	123	141	57	8		92--
Metropolitan	549	120	12	6	121	140	57	8		94-
Rural	593	145	14	7	127	144	58	7		86-
Ohio	562	134	15	9	152++	112--	47-	10		76--
Metropolitan	533	116	17	8	148+	109--	45-	13		77--
Rural	669	199+	7	11	165	125	55	0		76
Indiana	590	120	17	5	114	180+	64	10		101
Metropolitan	558	98-	16	5	109	178	73	8		115
Rural	655	165	19	6	123	184	45	13		72-
Illinois	560	131	11	5	108	132	60	6		103
Metropolitan	557	134	8	6	107	132	61	5		113
Rural	566	121	20	0	112	132	55	9		75-
Michigan	517	136	9	6	96-	124	49	6		83-
Metropolitan	520	139	8	5	96	122	48	5		83-
Rural	509	126	11	7	95	130	53	7		83
Wisconsin	585	103-	13	7	145	179+	71	6		102
Metropolitan	594	97-	14	5	144	193+	64	7		87
Rural	565	117	13	13	146	146	88	4		138

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	
West North Central	3,015	1.40++	8.08	166	82	2,896
Metropolitan	1,432	1.52++	8.52	167	88+	1,371
Rural	1,583	1.31++	7.68	164	76	1,525
Minnesota	391	0.98	7.94	230++	77	375
Metropolitan	178	0.95	8.21	219	79	170
Rural	213	1.02	7.72	239++	75	205
Iowa	593	1.47++	8.03	157	79	566
Metropolitan	201	1.47++	7.98	134	75	192
Rural	392	1.47++	8.06	168	82	374
Missouri	1,017	1.55++	8.54	149	97++	974
Metropolitan	604	1.58++	8.97	161	96+	577
Rural	413	1.51++	7.91	133	99	397
North Dakota	79	0.92	7.49	165	0--	79
Metropolitan	28	1.22	9.04	214	0	28
Rural	51	0.82-	6.65	137	0	51
South Dakota	97	1.01	8.26	124	72	94
Metropolitan	32	1.57	8.31	156	156	30
Rural	65	0.86-	8.23	108	31	64
Nebraska	230	1.10	8.04	152	61	223
Metropolitan	111	1.58++	9.42	180	81	107
Rural	119	0.85--	6.76	126	42	116
						247
						234
						259
						266
						267
						266
						319
						367
						297
						296-
						280
						310

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges												
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other	Number of CABGs(2) per 1,000 procedures(3)		
West North Central Metropolitan Rural	517--	106--	78	12	7	103--	133	67	11	121		
	498--	90--	78	10	7	104	133	66	9	128		
	533	120	78	14	6	103	132	68	12	114		
Minnesota Metropolitan Rural	565	128	101	24	8	91	120	80	13	136		
	576	135	100	24	12	88	118	76	24	146		
	556	122	102	24	5	93	122	83	5	127		
Iowa Metropolitan Rural	461--	104	74	11	4	67--	129	62	11	120		
	396--	89	36--	5	0	68--	125	68	5	114		
	495	112	94	13	5	67--	131	59	13	122		
Missouri Metropolitan Rural	528	100--	79	9	6	113	152	63	6	114		
	522	101	88	7	9	113	137	61	7	119		
	537	98	65	13	3	113	174	65	5	107		
North Dakota Metropolitan Rural	557	76	38	25	0	228+	101	63	25	177		
	464	36	71	36	0	107	179	36	0	214		
	608	98	20	20	0	294++	59	78	39	157		
South Dakota Metropolitan Rural	415	117	74	0	0	43--	74--	85	21	134		
	500	167	100	0	0	0	133	67	33	125		
	375--	94	63	0	0	63	47--	94	16	138		
Nebraska Metropolitan Rural	435--	81--	72	4	4	99	103	67	4	148		
	430	28--	93	0	9	103	112	75	9	180		
	440	129	52	9	0	95	95	60	0	118		

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

(3) Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Index stay							Number of persons with 1 readmission or more per 1,000 live discharges	
Area of residence	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive		Within 90 days for any cause
Kansas	608	1.98++	7.48	171	81	585	285	354
Metropolitan	278	2.25++	7.72	162	90	267	247	326
Rural	330	1.79++	7.28	179	73	318	318	377
South	9,957	1.11++	7.79	153	74	9,639	269	370++
Metropolitan	6,721	1.17++	7.81	151	74	6,499	270	366
Rural	3,236	1.00--	7.75	158	74	3,140	267	379++
South Atlantic	4,957	1.06	7.54	160	64-	4,810	267	381++
Metropolitan	3,691	1.11	7.65	154	66	3,575	262	372+
Rural	1,266	0.93--	7.20	177	61	1,235	279	406++
Delaware	47	0.67--	6.81	128	43	46	196	326
Metropolitan	25	0.56--	5.92	0-	40	25	160	360
Rural	22	0.85	7.82	273	45	21	238	286
Maryland	314	0.72--	6.96	137	22--	312	285	426+
Metropolitan	261	0.66--	6.93	146	23--	259	290	436++
Rural	53	1.28	7.13	94	19	53	264	377
Dist. of Columbia	48	0.73--	6.10	125	42	47	319	404
Metropolitan	48	0.73--	6.10	125	42	47	319	404
Rural	0	0.00	0.00	0	0	0	0	0
Virginia	492	0.87--	7.67	167	47--	481	264	376
Metropolitan	349	0.99	7.20	140	40--	342	254	380
Rural	143	0.68--	8.83	231+	63	139	288	367

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges										
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease			Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent CABG(2)		Number of CABGs(2) per 1,000 procedures(3)
		Other cardiac events	Subsequent CABG(1)	Other						
Kansas	562	116	74	15	12	125	138	67	15	104
	502	64--	64	15	7	131	146	67	7	115
	613	160	82	16	16	119	132	66	22	94
South Metropolitan Rural	573	131	76	14	6	135++	140	60	10	108
	556	122	71--	15	5	133++	142	59	9	106
	606++	150++	88	13	7	140++	138	61	10	112
South Atlantic Metropolitan Rural	600++	144+	73	15	6	140++	156+	56	10	98
	575	133	69-	15	6	135+	153	55	9	97
	671++	174++	85	14	8	151++	166+	59	14	102
Delaware Metropolitan Rural	543	130	43	22	0	130	196	22	0	64
	520	200	0	40	0	80	160	40	0	40
	571	48	95	0	0	190	238	0	0	91
Maryland Metropolitan Rural	782++	237++	67	19	16	163	183	80	16	111
	784++	239++	50-	19	19	154	201	85	15	115
	774	226	151	19	0	208	94	57	19	94
Dist. of Columbia Metropolitan Rural	681	64	255++	43	0	85	149	85	0	83
	681	64	255++	43	0	85	149	85	0	83
	0	0	0	0	0	0	0	0	0	0
Virginia Metropolitan Rural	611	183+	64	10	6	102	177	56	12	89
	608	158	76	12	3	111	178	61	9	89
	619	245+	36-	7	14	79	173	43	22	91

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Area of residence	Index stay				Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause
West Virginia	234	0.96	7.48	115-	68	229	284
Metropolitan	92	1.01	7.83	120	43	92	196
Rural	142	0.92-	7.26	113	85	137	343
North Carolina	579	0.84--	8.33	240++	88	548	221--
Metropolitan	332	0.96-	8.87	235++	123++	306	235
Rural	247	0.72--	7.60	247++	40-	242	202-
South Carolina	389	1.18	8.63	154	82	373	244
Metropolitan	229	1.23	8.80	148	79	220	236
Rural	160	1.13	8.39	163	88	153	255
Georgia	676	1.20++	6.50	166	65	657	300
Metropolitan	416	1.33++	6.81	159	70	401	299
Rural	260	1.05	6.01	177	58	256	301
Florida	2,178	1.28++	7.56	145	65	2,117	268
Metropolitan	1,939	1.28++	7.72	147	65	1,883	262
Rural	239	1.25+	6.22	130	63	234	316
East South Central	1,684	0.98--	8.30	149	83	1,619	287
Metropolitan	885	1.01	8.18	160	86	850	296
Rural	799	0.94--	8.44	136	80	769	276
Kentucky	259	0.61--	7.67	147	66	255	259
Metropolitan	101	0.55--	7.67	218	30	100	250
Rural	158	0.66--	7.66	101-	89	155	265

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges												
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other	Number of CABGs(2) per 1,000 procedures(3)		
West Virginia Metropolitan Rural	607	157	79	17	9	127	175	35--	9	51--		
	359--	109	43	33	0	43--	109	22	0	33--		
	774+	190	102	7	15	182	219	44	15	63		
North Carolina Metropolitan Rural	489	128	75	5	2	111	109	47	11	81--		
	454--	92	88	3	0	108	111	39	13	75		
	533	174	58	8	4	116	107	58	8	89		
South Carolina Metropolitan Rural	550	115	123+	16	3	80--	150	54	8	123		
	445--	105	68	5	5	59--	141	64	0	135		
	699	131	203++	33	0	111	163	39	20	106		
Georgia Metropolitan Rural	731++	143	65	15	9	251++	180+	61	6	127		
	706++	122	70	12	7	257++	177	55	5	125		
	770++	176	59	20	12	242++	184	70	8	131		
Florida Metropolitan Rural	566	131	65--	16	6	130	151	56	11	96		
	557	129	65--	17	6	131	147	52	11	94		
	645	150	68	9	9	124	184	85	17	113		
East South Central Metropolitan Rural	582	141	83	15	6	147++	114--	66	9	119		
	593	133	73	19	6	147	131	75	9	130		
	570	151	94	12	5	147	96--	56	9	108		
Kentucky Metropolitan Rural	604	165	86	12	8	192+	90--	51	0	85		
	620	150	40	20	10	230+	100	70	0	129		
	594	174	116	6	6	168	84--	39	0	57--		

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
Tennessee	505	0.92--	8.70	111--	85	484	298	395
Metropolitan	317	0.93--	8.54	129	91	305	295	387
Rural	188	0.90--	8.98	80--	74	179	302	408
Alabama	662	1.43++	8.22	186	92	634	289	412++
Metropolitan	406	1.44++	8.09	182	94	387	295	398
Rural	256	1.41++	8.42	191	90	247	279	433+
Mississippi	258	0.89--	8.38	132	74	246	289	305
Metropolitan	61	0.92	7.74	82	98	58	397+	431
Rural	197	0.88--	8.58	147	66	188	255	266--
West South Central	3,316	1.28++	7.92	145--	84+	3,210	264	349
Metropolitan	2,145	1.37++	7.94	142--	84+	2,074	272	343
Rural	1,171	1.15+	7.87	151	85	1,136	248	359
Arkansas	363	1.13	8.66	154	69	353	249	363
Metropolitan	97	0.96	8.24	196	41	95	211	358
Rural	266	1.20	8.81	139	79	258	264	364
Louisiana	648	1.56++	7.85	125--	97+	628	291	393
Metropolitan	452	1.69++	8.27	117--	100+	436	307	390
Rural	196	1.33++	6.88	143	92	192	255	401
Oklahoma	493	1.30++	8.19	181	69	479	253	334
Metropolitan	264	1.47++	8.48	178	68	255	247	310
Rural	229	1.15	7.85	183	70	224	259	362

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges												
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other	Number of CABGs(2) per 1,000 procedures(3)		
Tennessee Metropolitan Rural	545	128	50--	14	0	169+	105-	68	10	111		
	541	111	43--	16	0	167	118	72	13	117		
	553	156	61	11	0	173	84-	61	6	101		
Alabama Metropolitan Rural	628	147	96	19	9	134	137	77	8	137		
	630	152	93	23	8	121	147	80	5	143		
	623	138	101	12	12	154	121	73	12	129		
Mississippi Metropolitan Rural	512	130	110	12	4	89	98	49	20	124		
	569	86	155	0	17	69	138	69	34	115		
	495	144	96	16	0	96	85-	43	16	127		
West South Central Metropolitan Rural	527-	107--	77	13	5	124	130	62	8	117		
	509--	98--	72	14	4	124	127	59	9	112		
	560	123	86	12	7	122	135	67	7	126		
Arkansas Metropolitan Rural	555	110	88	11	8	142	122	71	3	163+		
	537	95	84	11	11	147	126	63	0	206		
	562	116	89	12	8	140	120	74	4	147		
Louisiana Metropolitan Rural	597	108	86	13	2	154+	164	61	10	108		
	564	89-	94	16	2	154	154	44	11	95		
	672	151	68	5	0	156	188	99	5	138		
Oklahoma Metropolitan Rural	503	121	71	19	8	123	117	33--	10	93		
	475	118	59	20	4	102	114	47	12	106		
	536	125	85	18	13	147	121	18--	9	79		

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
Texas	1,812	1.23++	7.71	141-	87+	1,750	260	334-
Metropolitan	1,332	1.30++	7.69	140-	85	1,288	270	332
Rural	480	1.07	7.77	146	92	462	232	338
West	6,406	1.41++	5.96	185++	74	6,256	267	341--
Metropolitan	5,227	1.43++	6.01	184++	77	5,097	266	343-
Rural	1,179	1.31++	5.77	189++	59	1,159	274	330-
Mountain	1,680	1.40++	6.46	174	74	1,644	262	334-
Metropolitan	1,044	1.45++	6.66	170	79	1,018	252	341
Rural	636	1.33++	6.13	182	66	626	278	323
Montana	225	2.31++	5.98	187	71	223	350++	386
Metropolitan	39	1.84++	6.41	256	77	38	211	237
Rural	186	2.44++	5.89	172	70	185	378++	416
Idaho	113	1.03	5.13	204	9--	113	186-	319
Metropolitan	23	1.25	4.52	130	0	23	87	348
Rural	90	0.99	5.29	222	11-	90	211	311
Wyoming	48	1.13	6.17	125	21	48	250	250
Metropolitan	17	1.39	6.59	59	59	17	294	235
Rural	31	1.03	5.94	161	0	31	226	258
Colorado	253	0.95-	7.53	170	71	248	234	306
Metropolitan	201	1.00	7.73	179	65	197	218	310
Rural	52	0.80-	6.75	135	96	51	294	294

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges											
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease			Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other	Number of CABGs(2) per 1,000 procedures(3)
		Other cardiac events	cardiac events	heart disease							
Texas Metropolitan Rural	502--	102--	74	12	5	5	109	123	69	9	117
	495--	98--	67	12	5	5	117	121	67	9	112
	524	115	93	13	6	6	87-	128	74	9	131
West Metropolitan Rural	531-	112--	84	14	7	7	87--	148	69+	11	112
	533-	114--	83	14	6	6	88--	149	68	11	114
	523	104-	88	16	9	9	84--	140	72	10	104
Mountain Metropolitan Rural	496--	81--	76	14	8	8	95--	130	72	20++	118
	468--	72--	59-	13	7	7	97	120	79	22++	134+
	543	96-	104	16	10	10	93	145	62	18	91
Montana Metropolitan Rural	655	76-	126	27	4	4	126	175	103	18	129
	368	0-	79	0	26	26	79	53	132	0	179
	714+	92	135	32	0	0	135	200	97	22	118
Idaho Metropolitan Rural	451	88	53	9	0	0	62-	186	44	9	53-
	391	87	0	0	0	0	0	174	130	0	130
	467	89	67	11	0	0	78	189	22	11	33-
Wyoming Metropolitan Rural	500	83	146	21	0	0	146	0--	83	21	104
	294	59	0	59	0	0	118	0	59	0	59
	613	97	226+	0	0	0	161	0-	97	32	129
Colorado Metropolitan Rural	427--	101	40--	20	4	4	56--	129	69	8	134
	401--	96	30--	20	5	5	51--	112	76	10	154
	529	118	78	20	0	0	78	196	39	0	58

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons discharged alive	Within 90 days for any cause	With an event
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures			
New Mexico	164	1.31+	6.20	122	67	157	248	248--
Metropolitan	77	1.49+	5.99	78--	52	74	230	257--
Rural	87	1.18	6.39	161	80	83	265	241--
Arizona	527	1.51++	6.50	173	78	515	258	355
Metropolitan	408	1.58++	6.45	162	86	396	283	376
Rural	119	1.31	6.66	210	50	119	176--	286
Utah	211	1.64++	5.91	171	114	204	260	348
Metropolitan	161	1.73++	6.09	161	112	157	261	376
Rural	50	1.42	5.30	200	120	47	255	255
Nevada	139	1.70++	7.47	230+	86	136	272	338
Metropolitan	118	1.83++	7.31	246+	68	116	250	328
Rural	21	1.21	8.38	143	190	20	400	400
Pacific	4,726	1.42++	5.79	189++	74	4,612	269	343
Metropolitan	4,183	1.43++	5.84	188++	77	4,079	269	344
Rural	543	1.30++	5.35	197+	50-	533	268	338
Washington	574	1.24++	5.32	293++	66	558	263	346
Metropolitan	426	1.23+	5.56	312++	66	414	273	360
Rural	148	1.29+	4.63	236+	68	144	236	306
Oregon	341	1.12	5.43	191	76	333	252	339
Metropolitan	184	1.01	5.41	168	98	179	235	330
Rural	157	1.29+	5.45	217	51	154	273	351

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges										
Area of residence	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease			Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other	Number of CABGs(2) per 1,000 procedures(3)
	Total	Other cardiac events	heart disease							
New Mexico Metropolitan Rural	299--	70	32--	0	6	64--	76--	38	13	61--
	311--	95	54	0	14	81	27--	41	0	39
	289--	48	12--	0	0	48	120	36	24	80
Arizona Metropolitan Rural	555	76	103	8	8	128	146	64	23+	116
	566	71	86--	8	5	141	157	71	28++	120
	521	92	160	8	17	84	109	42	8	101
Utah Metropolitan Rural	431-	49	54--	25	25+	78	103	69	29+	100
	439	51	38--	25	13	89	121	64	38++	99
	404	43	106	21	64++	43	43	85	0	100
Nevada Metropolitan Rural	500	103	59--	7	7	66--	96	125+	37+	230++
	457	69	60--	9	0	69	95	129+	26	254++
	750	300+	50	0	50	50	100	100	100+	95
Pacific Metropolitan Rural	544	87	123	14	7	84--	154+	67	7-	110
	550	89	124	14	6	86--	157+	65	8	109
	499	69	114	15	9	73--	133	83	2	120
Washington Metropolitan Rural	538	57-	95-	11	4	102	156	109++	4	167++
	580	68	92-	12	5	104	176	118++	5	185++
	417-	28--	104	7	0	97	97	83	0	115
Oregon Metropolitan Rural	471	75	117	6	6	63--	123	78	3	100
	408--	67	89	6	0	56--	117	73	0	103
	545	84	149	6	13	71	130	84	6	96

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
California	3,747	1.51++	5.88	173+	75	3,657	273	343
Metropolitan	3,526	1.51++	5.89	174+	77	3,439	272	343
Rural	221	1.50++	5.60	154	41-	218	284	344
Alaska	8	0.49--	6.13	125	0	8	0	0
Metropolitan	2	0.36	4.50	0	0	2	0	0
Rural	6	0.56-	6.67	167	0	6	0	0
Hawaii	56	0.70--	6.70	179	36	56	214	375
Metropolitan	45	0.78-	6.38	156	44	45	156-	311
Rural	11	0.49--	8.00	273	0	11	455	636

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 3. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan and rural counties: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges										
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease			Noncardiac vascular events	Infections	Cardiac catheterization without revascularization		Subsequent PTCA(1)	Subsequent CABG(2)
		Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease	Other cardiac events	Cardiac catheterization without revascularization						
California	553	129	92+	15	7	84--	157+	61	8	102
Metropolitan	555	131	93+	15	7	85--	157+	59	9	100
Rural	518	101	83	23	14	64--	147	87	0	140
Alaska	0-	0	0	0	0	0	0	0	0	125
Metropolitan	0	0	0	0	0	0	0	0	0	0
Rural	0	0	0	0	0	0	0	0	0	167
Hawaii	500	89	107	18	0	71	179	36	0	107
Metropolitan	422	89	89	0	0	89	111	44	0	111
Rural	818	91	182	91	0	0	455+	0	0	91

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
United States	28,817	1.08	7.49	159	72	28,000	267	357
Northeast	3,898	0.62--	8.73	157	59--	3,822	265	357
New England	964	0.61--	9.17	192++	62	945	280	373
Maine	76	0.50--	6.55	79--	13	76	184	355
Bangor	9	0.56--	6.22	111	0	9	333	556
Lewiston-Auburn	6	0.45--	4.83	0	0	6	167	500
Portland	23	0.44--	6.74	87	43	23	130	348
New Hampshire	51	0.44--	10.27	235	39	50	380	480
Manchester	21	0.47--	5.90	238	0	21	381	571
Portsmouth	16	0.54--	11.44	63	0	16	313	313
Vermont	35	0.56--	8.11	257	143	33	303	303
Burlington	8	0.77	9.00	500	125	7	286	286
Massachusetts	418	0.59--	9.71	211++	69	407	295	371
Boston	278	0.65--	10.33	219+	72	270	326+	396
New Bedford	39	0.60--	9.82	154	51	38	237	289
Pittsfield	4	0.20--	2.50	250	0	4	0	250
Springfield	43	0.60--	7.93	140	47	43	256	302
Worcester	25	0.35--	7.56	360+	160	23	217	391
Rhode Island	96	0.73--	11.13	177	42	96	313	344
Providence	96	0.73--	11.13	177	42	96	313	344

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges										
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other	Number of CABGs(2) per 1,000 procedures(3)
United States	558	129	81	14	7	118	140	61	10	105
Northeast	593+	172++	79	13	8	126	128	56	11	90--
New England	649++	216++	85	15	6	124	134	59	11	103
Maine	605	184	118	0	0	145	118	26	13	66
Bangor	889	222	222	0	0	222	222	0	0	111
Lewiston-Auburn	1333+	500	0	0	0	500	333	0	0	0
Portland	435	130	130	0	0	0	87	43	43	43
New Hampshire	800	240	80	20	0	140	200	80	40	118
Manchester	1000	286	95	0	0	190	333	95	0	143
Portsmouth	500	125	63	0	0	0	188	125	0	125
Vermont	424	121	30	0	0	0-	152	61	61	114
Burlington	429	143	0	0	0	0	0	143	143	125
Massachusetts	683+	278++	88	20	10	96	135	49	7	86
Boston	759++	307++	104	30	11	100	130	67	11	104
New Bedford	526	237	0	0	0	53	211	26	0	26
Pittsfield	250	0	0	0	0	0	250	0	0	0
Springfield	465	186	70	0	0	47	163	0	0	23
Worcester	435	130	43	0	0	174	43	43	0	200
Rhode Island	615	177	63	21	0	115	167	73	0	135
Providence	615	177	63	21	0	115	167	73	0	135

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
Connecticut	288	0.73--	8.36	184	66	284	254	380
Bridgeport	87	0.90	7.54	218	115	85	282	424
Hartford	87	0.55--	7.92	126	46	86	279	395
New Haven	100	0.97	9.58	220	40	99	192	323
New London	10	0.36--	8.40	100	100	10	500	500
Middle Atlantic	2,934	0.62--	8.58	145--	58--	2,876	260	352
New York	1,089	0.51--	8.23	148	51--	1,070	235--	345
Albany	29	0.25--	5.48	103	34	29	345	310
Binghamton	29	0.82	4.86	34	34	29	172	379
Buffalo	60	0.45--	7.42	200	17	60	250	417
Elmira	4	0.29--	9.25	250	0	4	250	500
Glens Falls	3	0.20--	11.33	0	0	3	333	667
Nassau-Suffolk	189	0.64--	7.59	153	32--	188	245	309
New York	515	0.52--	9.97	157	72	499	210--	325
Niagara Falls	17	0.55--	6.94	176	118	17	353	529
Orange County	14	0.46--	9.14	71	0	14	286	143
Poughkeepsie	10	0.36--	8.70	200	0	10	500	800
Rochester	41	0.40--	5.56	171	49	41	244	439
Syracuse	40	0.53--	6.13	125	100	38	289	447
Utica-Rome	25	0.53--	3.68	40	0	25	120	320

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Index stay					Number of persons with 1 readmission or more per 1,000 live discharges			
Area of residence	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
New Jersey	438	0.48--	8.26	158	46--	434	249	339
Atlantic City	28	0.60--	9.93	250	0	28	286	321
Bergen-Passaic	100	0.58--	6.85	120	20	100	280	360
Jersey City	25	0.39--	9.24	80	0	25	40-	240
Middlesex	41	0.45--	6.71	195	24	41	171	293
Monmouth-Ocean	64	0.41--	9.63	188	94	63	302	365
Newark	111	0.52--	8.31	144	36	110	245	309
Trenton	17	0.44--	6.59	118	59	17	294	353
Vineland	4	0.24--	11.25	0	0	4	250	750
Pennsylvania	1,407	0.85--	8.95	139-	67	1,372	283	362
Allentown	67	0.71--	7.09	164	104	65	292	385
Altoona	4	0.19--	10.75	0	0	4	500	750
Beaver County	23	0.83	7.70	174	0	23	391	391
Erie	30	0.85	9.27	233	100	29	379	345
Harrisburg	51	0.70--	9.18	275	78	50	240	360
Johnstown	13	0.32--	8.23	154	0	13	154	77
Lancaster	115	2.39++	12.51	139	113	111	162--	198--
Philadelphia	454	0.80--	9.81	159	73	444	277	385
Pittsburgh	282	0.87--	8.44	106--	60	276	341+	402
Reading	67	1.38	8.03	75--	45	66	348	364
Scranton	80	0.65--	7.70	113	50	77	234	260-
Sharon	22	1.16	5.95	45	45	22	318	545
State College	3	0.30--	4.00	0	0	3	333	333
Williamsport	12	0.71	5.17	83	83	11	91	273
York	27	0.56--	5.89	111	111	25	320	440

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges												
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease			Noncardiac vascular events	Infections	Cardiac catheterization without revascularization		Subsequent PTCA(1)	Subsequent CABG(2)	Other	Number of CABGs(2) per 1,000 procedures(3)
		171	107	160			115	71				
New Jersey	590	171	107	160	12	9	115	71	138	53	12	89
Atlantic City	679	107	160	160	36	36	143	143	130	36	0	179
Bergen-Passaic	580	160	160	160	0	20	160	160	130	60	10	80
Jersey City	600	160	160	160	0	0	40	40	120	80	0	80
Middlesex	585	171	160	160	49	0	122	122	122	98	0	122
Monmouth-Ocean	587	222	160	160	0	16	63	79	122	48	32	94
Newark	518	145	160	160	9	0	118	118	155	27	0	45--
Trenton	529	59	160	160	0	0	118	118	235	0	0	59
Vineland	1750+	1250++	160	160	0	0	500	500	0	0	0	0
Pennsylvania	606	160+	160	160	15	9	131	131	128	54	12	83--
Allentown	723	123	160	160	31	15	185	185	138	62	15	60
Altoona	2250++	750+	160	160	0	0	250	250	500	0	0	0
Beaver County	609	217	160	160	0	43	87	87	130	43	0	43
Erie	517	103	160	160	0	0	103	103	138	103	0	233
Harrisburg	560	100	160	160	0	0	120	120	200	20	0	59
Johnstown	385	308	160	160	0	0	0	0	0	77	0	77
Lancaster	261--	36--	160	160	0	0	27--	27--	72--	18	9	52--
Philadelphia	610	189+	160	160	11	14	126	126	126	43	16	86
Pittsburgh	678+	152	160	160	22	7	159	159	109	83	22	103
Reading	727	106	160	160	0	0	288++	288++	182	91	15	119
Scranton	506	182	160	160	0	13	65	65	117	52	13	63
Sharon	727	182	160	160	0	0	273	273	136	45	0	45
State College	667	0	160	160	333	0	0	0	0	0	0	0
Williamsport	364	91	160	160	0	0	182	182	91	0	0	0
York	520	80	160	160	80	0	160	160	120	40	0	37

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

(3) Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
North Central	8,556	1.24++	7.72	146--	74	8,283	267	352
East North Central	5,541	1.17++	7.53	136--	70	5,387	264	358
Ohio	1,322	1.05	7.58	126--	68	1,285	260	360
Akron	74	0.98	7.34	149	108	70	300	414
Canton	48	0.92	7.56	167	42	48	396	417
Cincinnati	132	0.83--	7.57	121	68	127	220	315
Cleveland	202	0.83--	6.72	163	50	200	245	320
Columbus	208	1.71++	9.91	125	130+	201	249	333
Dayton	123	1.19	7.32	179	98	116	259	319
Hamilton	29	1.11	4.93	69	103	28	393	500
Lima	21	1.07	7.38	190	0	21	190	190
Lorain-Elyria	37	1.35	5.05	162	0	37	351	378
Mansfield	22	1.44	6.77	91	0	22	45-	91-
Steubenville	32	1.46	5.59	94	63	31	355	355
Toledo	35	0.50--	8.23	57	29	35	229	343
Youngstown	102	1.47++	6.89	108	59	98	265	469+

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges									
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease				Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other
		Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization				
North Central	545	119-	13	6	116	138	60	9	102
East North Central	561	126	13	6	123	141	57	8	92--
Ohio	562	134	15	9	152++	112--	47-	10	76--
Akron	786	143	0	29	200	257+	100	0	162
Canton	708	167	0	21	208	104	63	21	104
Cincinnati	543	134	16	8	150	79-	31	0	53-
Cleveland	540	175	10	0	120	90-	45	30+	94
Columbus	458	104	20	15	154	70--	40	5	43--
Dayton	431	52--	9	0	172	95	26	0	81
Hamilton	679	179	36	0	143	143	71	36	69
Lima	190--	0	95	0	95	0	0	0	95
Lorain-Elyria	595	135	27	0	135	162	27	0	81
Mansfield	91--	0	0	0	0	91	0	0	45
Steubenville	452	194	97+	0	65	32	32	0	31
Toledo	400	143	29	0	57	57	57	29	57
Youngstown	704	61-	0	0	224	173	82	31	98

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
Indiana	953	1.53++	7.39	89--	65	923	296	386
Anderson	27	1.57	6.85	0-	74	27	222	333
Bloomington	16	2.02+	5.81	125	63	16	438	375
Elkhart-Goshen	24	1.53	5.96	42	208	22	409	409
Evansville	53	1.54+	8.60	38-	57	51	275	333
Fort Wayne	76	2.02++	10.32	118	66	74	257	297
Gary-Hammond	93	1.52++	8.95	54--	108	88	330	364
Indianapolis	220	1.86++	7.28	86--	73	210	262	357
Kokomo	26	2.40++	5.81	115	38	26	346	423
Lafayette	8	0.71	6.25	125	0	8	125	125
Muncie	9	0.65	8.56	111	0	9	222	333
South Bend	26	0.78	8.12	231	38	25	160	440
Terre Haute	37	1.89++	6.19	162	27	37	216	378
Illinois	1,355	1.07	8.38	144	82	1,310	279	350
Aurora-Elgin	30	0.97	9.93	133	200+	29	241	379
Bloomington	11	0.87	5.55	182	0	11	273	273
Champaign	13	0.97	8.08	231	77	13	308	308
Chicago	594	0.98-	8.41	145	74	575	273	334
Decatur	13	0.81	11.46	154	0	13	462	538
Joliet	37	1.32	5.59	27-	81	36	417	417
Kankakee	7	0.58-	5.71	0	143	7	143	286
Lake County	41	1.14	7.17	293	0	41	317	317
Peoria	55	1.26	11.24	127	91	51	196	216-
Rockford	71	2.50++	9.17	127	113	68	250	382
Springfield	32	1.29	10.34	188	63	32	281	469

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease					Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other	Number of CABGs(2) per 1,000 procedures(3)
		Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)					
Indiana	590	120	80	17	5	114	180+	64	10	101	
Anderson	407	0	37	0	0	37	259	74	0	74	
Bloomington	625	125	188	125+	0	63	125	0	0	63	
Bloomington-Goshen	636	318	0	0	0	91	182	45	0	42	
Evansville	451	20-	98	0	20	59	137	118	0	132	
Fort Wayne	446	108	149	27	0	68	41--	54	0	145	
Gary-Hammond	557	148	34	23	0	136	114	68	34	97	
Indianapolis	581	71--	52	10	5	105	257++	76	5	95	
Kokomo	654	192	115	0	0	77	231	38	0	115	
Lafayette	125	0	0	0	0	0	0	125	0	250	
Muncie	333	0	0	111	0	0	111	111	0	111	
South Bend	600	120	0	0	0	240	160	80	0	231	
Terre Haute	622	54	81	27	27	135	243	54	0	135	
Illinois	560	131	107+	11	5	108	132	60	6	103	
Aurora-Elgin	517	69	138	0	0	103	103	103	0	100	
Bloomington	364	0	182	0	0	0	91	0	91	91	
Champaign	615	154	154	0	0	154	77	77	0	231	
Chicago	558	146	103	10	5	108	130	50	5	91	
Decatur	846	154	0	0	0	231	385	77	0	154	
Joliet	639	83	194	0	0	111	111	111	28	135	
Kankakee	429	143	143	0	0	0	143	0	0	0	
Lake County	488	220	73	0	24	122	24-	24	0	171	
Peoria	353-	78	98	0	0	59	39	78	0	164	
Rockford	574	103	74	0	15	103	191	88	0	113	
Springfield	656	31	63	63	31	94	281	94	0	250+	

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures		Number of persons discharged alive	Within 90 days for any cause
Michigan	1,076	1.10	6.82	123--	72	1,054	235--	318--
Ann Arbor	25	1.41	7.36	120	40	25	280	360
Battle Creek	39	2.32++	5.59	103	128	38	211	368
Benton Harbor	45	2.08++	5.36	222	111	43	372	512+
Detroit	365	0.81--	7.84	112--	63	356	211--	301-
Flint	37	0.86	6.95	189	81	37	432	378
Grand Rapids	75	1.17	5.45	187	107	73	137--	178--
Jackson	24	1.41	6.75	292	125	24	292	458
Kalamazoo	55	2.56++	6.98	73	91	53	321	340
Lansing	42	1.29	4.00	71	48	41	293	366
Muskegon	29	1.53	8.21	69	69	29	345	241
Saginaw	51	1.21	6.41	78	20	50	80--	220-
Wisconsin	835	1.37++	7.19	210++	55-	815	249	390+
Appleton	50	1.45	7.84	240	60	50	320	400
Eau Claire	8	0.47--	7.25	0	125	7	143	143
Green Bay	18	0.94	10.11	278	0	18	222	222
Janesville	19	1.15	8.79	316	0	19	0-	53-
Kenosha	29	2.03+	8.59	310	69	29	414	414
LaCrosse	19	1.60	7.37	53	105	18	278	389
Madison	50	1.62+	7.10	180	60	47	170	362
Milwaukee	332	1.99++	6.93	256++	54	326	264	439++
Racine	26	1.27	3.38	346	38	26	38-	308
Sheboygan	13	0.90	4.15	0	77	13	0	385
Wausau	15	1.16	7.80	67	0	15	133	400

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges										
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease					Cardiac catheterization without revascularization		Subsequent CABG(2)	Number of CABGs(2) per 1,000 procedures(3)
		Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other		
Michigan	517	136	9	6	96-	124	49	6		83-
Ann Arbor	440	40	0	40	40	120	80	40		80
Battle Creek	632	132	26	0	105	211	26	0		51
Benton Harbor	791	140	23	23	256+	209	47	23		156
Detroit	531	169	6	0	104	129	45	6		82
Flint	622	216	0	0	162	27	81	0		81
Grand Rapids	247--	14--	0	14	41	82	0-	0		93
Jackson	917	292	0	0	125	125	42	0		42
Kalamazoo	472	19-	0	19	75	170	94	0		109
Lansing	805	268+	0	0	73	146	122	0		119
Muskegon	310-	103	69	0	69	34	0	0		0
Saginaw	240--	80	0	0	0--	40	40	0		39
Wisconsin	585	103-	13	7	145	179+	71	6		102
Appleton	640	40	20	20	180	180	120	0		180
Eau Claire	143	143	0	0	0	0	0	0		0
Green Bay	333	0	0	56	56	111	56	0		111
Janesville	53--	0	0	0	0	53	0	0		53
Kenosha	862	345+	0	0	103	207	103	0		103
LaCrosse	611	167	0	0	56	167	111	0		105
Madison	553	106	21	0	85	170	43	21		80
Milwaukee	629	86-	18	3	166	236++	55	3		72-
Racine	577	38	0	0	192	115	77	0		115
Sheboygan	385	0	0	0	77	154	77	77		77
Wausau	533	133	0	0	267	0	67	67		67

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
West North Central	3,015	1.40++	8.08	166	82	2,896	271	342
Minnesota	391	0.98	7.94	230++	77	375	280	357
Duluth	22	0.73-	6.64	91	91	20	250	500
Minneapolis	126	0.89-	8.88	206	56	122	287	320
Rochester	20	2.13+	9.00	400+	250+	18	389	333
St. Cloud	17	1.39	4.47	118	0	17	118	176
Iowa	593	1.47++	8.03	157	79	566	260	318-
Cedar Rapids	15	0.78	10.80	200	0	15	333	267
Davenport	46	1.03	8.70	239	43	46	239	413
Des Moines	87	2.17++	7.59	80--	92	82	207	305
Dubuque	5	0.44--	8.80	400	200	4	500	250
Iowa City	7	1.12	6.14	143	0	7	286	429
Sioux City	36	2.26++	6.83	56	28	36	333	306
Waterloo	14	0.72	6.79	214	214	11	273	0-
Missouri	1,017	1.55++	8.54	149	97++	974	272	353
Columbia	12	1.40	8.92	83	83	12	250	333
Joplin	22	1.14	6.73	227	91	20	200	400
Kansas City	319	2.06++	7.88	116-	110+	306	288	359
St. Joseph	26	1.91+	6.85	115	77	26	231	385
St. Louis	342	1.21+	9.20	193	108+	324	275	343
Springfield	81	2.93++	10.72	173	74	79	354	342
North Dakota	79	0.92	7.49	165	0--	79	266	354
Bismarck	13	1.59	10.23	385	0	13	154	231
Fargo	10	0.71	6.10	100	100	9	444	667
Grand Forks	7	1.23	8.86	143	0	7	286	286

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges											
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease					Cardiac catheterization without revascularization		Subsequent CABG(2)		Number of CABGs(2) per 1,000 procedures(3)
		West North Central	517--	106--	78	12	7	103--	Subsequent PTCA(1)	Other	
West North Central	517--										121
Minnesota	565	128	101	24	8		91	120	13		136
Duluth	900	250	300+	0	0		100	100	100+		91
Minneapolis	623	172	98	16	16		98	123	98	0	151
Rochester	389	56	0	56	0		0	111	111+		150
St. Cloud	235	0	0	59	0		118	59	0	0	118
Iowa	461--	104	74	11	4		67--	129	11		120
Cedar Rapids	533	133	67	0	0		67	267	0	0	67
Davenport	522	174	43	0	0		87	130	87	0	196
Des Moines	402	61-	37	0	0		98	110	98	0	126
Dubuque	250	0	0	0	0		0	250	0	0	0
Iowa City	571	143	0	0	0		0	429	0	0	0
Sioux City	361	56	28	0	0		28	139	111	0	111
Waterloo	0--	0	0	0	0		0	0	0	0	143
Missouri	528	100-	79	9	6		113	152	63	6	114
Columbia	500	83	0	0	0		250	167	0	0	0
Joplin	450	150	50	50	0		100	100	0	0	91
Kansas City	533	78--	85	3	0		137	157	62	10	94
St. Joseph	654	269	77	0	0		192	115	0	0	0
St. Louis	528	102	108	3	6		114	120	71	3	140
Springfield	557	139	51	13	38+		38-	190	76	13	160
North Dakota	557	76	38	25	0		228+	101	63	25	177
Bismarck	231	77	0	0	0		77	77	0	0	308
Fargo	778	0	111	111	0		111	333	111	0	200
Grand Forks	429	0	143	0	0		143	143	0	0	143

(1)Percutaneous transluminal coronary angioplasty.
(2)Coronary artery bypass graft.
(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4 Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Index stay							Number of persons with 1 readmission or more per 1,000 live discharges
Area of residence	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	
South Dakota	97	1.01	8.26	124	72	94	319
Rapid City	5	0.70	5.40	0	200	5	400
Sioux Falls	27	2.03+	8.85	185	148	25	360
Nebraska	230	1.10	8.04	152	61	223	296-
Lincoln	28	1.33	5.11	36	36	28	71--
Omaha	89	1.54++	10.80	236	101	85	341
Kansas	608	1.98++	7.48	171	81	585	354
Lawrence	11	2.22+	5.55	0	0	11	91
Topeka	56	2.95++	9.16	179	36	56	375
Wichita	87	1.90++	6.54	218	92	81	259-
South	9,957	1.11++	7.79	153	74	9,639	370++
South Atlantic	4,957	1.06	7.54	160	64-	4,810	381++
Delaware	47	0.67--	6.81	128	43	46	326
Wilmington	31	0.53--	6.19	32	32	31	355
Maryland	314	0.72--	6.96	137	22--	312	426+
Baltimore	106	0.43--	6.50	151	19-	105	362
Cumberland	14	0.82	4.64	214	71	14	286
Hagerstown	8	0.55--	6.25	375	125	8	625
Dist. of Columbia	48	0.73--	6.10	125	42	47	404
Washington	256	0.99	6.61	129	43-	253	462++

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges												
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other	Number of CABGs(2) per 1,000 procedures(3)		
South Dakota Rapid City Sioux Falls	415	117	74	0	0	43--	74--	85	21	134		
	400	0	200	0	0	0	200	0	0	0		
	520	200	80	0	0	0	120	80	40	148		
Nebraska Lincoln Omaha	435--	81--	72	4	4	99	103	67	4	148		
	71--	36	0	0	0	0	0--	36	0	71		
	553	47--	129	12	12	129	129	71	24	202+		
Kansas Lawrence Topeka Wichita	562	116	74	15	12	125	138	67	15	104		
	364	91	182	0	0	91	0	0	0	0		
	571	89	36	71+	18	143	125	71	18	196		
	395--	12--	49	0	12	111	136	74	0	92		
South	573	131	76	14	6	135++	140	60	10	108		
South Atlantic	600++	144+	73	15	6	140++	156+	56	10	98		
Delaware Wilmington	543	130	43	22	0	130	196	22	0	64		
	613	226	0	32	0	65	258	32	0	32		
Maryland Baltimore Cumberland Hagerstown	782++	237++	67	19	16	163	183	80	16	111		
	714	248+	29	29	10	124	143	95	38+	142		
	571	357	71	0	0	143	0	0	0	0		
	1125	500+	0	125	0	0	375	125	0	125		
Dist. of Columbia Washington	681	64	255++	43	0	85	149	85	0	83		
	763++	174	99	20	20	134	237++	75	4	90		

(1)Percutaneous transluminal coronary angioplasty.
(2)Coronary artery bypass graft.
(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Index stay							Number of persons with 1 readmission or more per 1,000 live discharges
Area of residence	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	
Virginia	492	0.87--	7.67	167	47--	481	376
Charlottesville	17	1.41	7.18	176	59	16	438
Danville	4	0.25--	24.25	250	0	4	250
Lynchburg	11	0.61--	6.45	91	0	11	636
Norfolk	112	1.08	6.78	143	45	109	349
Richmond	115	1.34+	7.99	130	0--	115	374
Roanoke	14	0.46--	9.86	143	143	12	250
West Virginia	234	0.96	7.48	115-	68	229	384
Charleston	56	1.64+	8.38	125	36	56	268
Huntington	15	0.37--	9.20	267	0	15	333
Parkersburg	6	0.30--	7.00	333	0	6	500
Wheeling	17	0.77	7.53	0	59	17	412
North Carolina	579	0.84--	8.33	240++	88	548	319
Asheville	11	0.45--	6.09	364	273	8	375
Burlington	12	0.83	7.42	333	83	11	455
Charlotte	100	0.91	8.91	170	90	95	295
Fayetteville	8	0.60-	7.13	750++	0	8	375
Greensboro	137	1.38+	8.99	161	139+	126	286
Hickory	12	0.51--	6.67	167	83	11	273
Jacksonville	4	0.78	7.00	250	250	4	250
Raleigh-Durham	45	0.80-	11.11	467++	156	40	275
Wilmington	10	0.79	6.90	400	0	10	400
Within 90 days for any cause							

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges

Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other	Number of CABGs(2) per 1,000 procedures(3)
Virginia	611	183+	64	10	6	102	177	56	12	89
Charlottesville	875	438+	63	0	0	0	250	63	63	59
Danville	250	0	250	0	0	0	0	0	0	0
Lynchburg	1182+	182	273	0	0	273	182	273	0	273
Norfolk	550	165	101	0	0	101	119	64	0	116
Richmond	583	96	61	9	0	157	200	52	9	70
Roanoke	417	250	0	83	0	83	0	0	0	0
West Virginia	607	157	79	17	9	127	175	35-	9	51--
Charleston	321--	71	18	18	0	36	161	18	0	36
Huntington	533	67	0	67	0	133	200	67	0	133
Parkersburg	833	167	0	167	0	167	167	167	0	167
Wheeling	529	176	118	0	59	118	59	0	0	0
North Carolina	489	128	75	5	2	111	109	47	11	81-
Asheville	375	0	125	0	0	0	250	0	0	0
Burlington	818	182	0	0	0	91	455+	91	0	83
Charlotte	442	53--	95	21	0	116	84	53	21	120
Fayetteville	375	125	0	0	0	0	250	0	0	0
Greensboro	452	87	87	0	0	135	87	40	16	73
Hickory	455	182	91	0	0	91	91	0	0	0
Jacksonville	500	250	0	0	0	0	0	250	0	250
Raleigh-Durham	400	100	125	0	0	75	100	0	0	67
Wilmington	500	200	0	0	0	100	200	0	0	0

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
South Carolina	389	1.18	8.63	154	82	373	244	335
Anderson	15	0.90	7.47	200	0	15	133	333
Charleston	22	0.64--	7.32	91	136	21	190	238
Columbia	65	1.84++	9.58	123	62	64	203	344
Florence	17	1.52	6.65	176	118	16	188	438
Greenville	71	1.08	9.24	169	70	68	324	294
Georgia	676	1.20++	6.50	166	65	657	300	470++
Albany	4	0.43--	5.00	250	0	4	0	500
Athens	20	1.48	3.35	200	0	20	200	650
Atlanta	277	1.46++	6.49	173	69	268	310	474++
Augusta	78	2.37++	8.92	77--	115	72	264	264
Columbus	15	0.66-	5.00	67	67	14	357	571
Macon	24	0.93	10.13	125	42	24	292	417
Savannah	18	0.71-	7.67	222	167	16	375	188

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges										
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other	Number of CABGs(2) per 1,000 procedures(3)
South Carolina	550	115	123+	16	3	80-	150	54	8	123
Anderson	467	267	0	0	0	133	67	0	0	133
Charleston	429	48	48	0	0	48	190	95	0	91
Columbia	516	156	78	0	16	31-	188	47	0	46
Florence	500	125	0	0	0	125	125	125	0	294
Greenville	441	59	103	0	0	59	132	88	0	183
Georgia	731++	143	65	15	9	251++	180+	61	6	127
Albany	500	0	0	0	0	500	0	0	0	250
Athens	1000	100	0	0	0	750++	150	0	0	0
Atlanta	743++	134	71	19	11	257++	201	45	4	108
Augusta	444	42-	83	0	0	111	139	56	14	128
Columbus	1214++	357	143	0	0	286	286	143	0	133
Macon	625	167	83	0	0	125	42	208+	0	333+
Savannah	313	0	0	0	0	188	63	63	0	222

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
Florida	2, 178	1.28++	7.56	145	65	2, 117	268	372
Bradenton	29	0.68--	6.24	207	0	29	172	310
Daytona Beach	118	1.88++	5.31	85--	59	116	233	388
Fort Lauderdale	306	1.68++	7.82	134	65	298	228	376
Fort Myers	78	1.27	6.36	218	38	78	244	346
Fort Pierce	54	1.31	7.37	185	37	54	315	407
Ft. Walton Beach	9	0.89	5.44	111	111	9	111	222
Gainesville	28	1.67	15.82	464++	107	26	346	462
Jacksonville	125	1.55++	8.10	152	48	122	336	377
Lakeland	70	1.26	7.00	43--	100	67	164-	254-
Melbourne	82	1.76++	8.49	134	134	78	397+	410
Miami-Hialeah	198	1.18	10.77	61--	106	186	296	446+
Naples	26	1.11	6.15	192	0	26	346	462
Ocala	36	1.15	7.83	167	167	35	286	429
Orlando	156	1.72++	7.23	128	58	152	270	375
Panama City	17	1.44	7.24	235	0	17	176	176
Pensacola	60	2.00++	7.28	233	167+	55	345	545++
Sarasota	127	1.63++	7.06	189	31	124	210	323
Tallahassee	20	1.15	5.05	150	50	20	300	400
Tampa	212	0.65--	6.96	127	47	208	231	308
West Palm Beach	188	1.35++	7.73	207	32--	183	262	322
East South Central	1, 684	0.98--	8.30	149	83	1, 619	287	381+
Kentucky	259	0.61--	7.67	147	66	255	259	353
Lexington	24	0.77	7.29	208	42	24	250	417
Louisville	53	0.49--	6.45	132	19	52	288	481
Owensboro	12	1.16	7.58	250	83	12	250	500

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges												
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other	Number of CABGs(2) per 1,000 procedures(3)		
Florida	566	131	65-	16	6	130	151	56	11	96		
Bradenton	483	138	69	34	34	172	34	0	0	103		
Daytona Beach	543	69-	34	43+	17	172	121	69	17	68		
Fort Lauderdale	493	111	67	13	7	114	144	27--	10	56--		
Fort Myers	500	128	51	13	13	115	141	38	0	38		
Fort Pierce	870+	315++	74	0	0	167	278+	19	19	130		
Ft. Walton Beach	222	111	0	0	0	111	0	0	0	0		
Gainesville	731	154	154	0	0	77	154	192+	0	250		
Jacksonville	541	115	41	16	0	148	139	74	8	88		
Lakeland	403	45	60	0	0	45	134	75	45	86		
Melbourne	731	192	128	26	13	103	192	38	38	122		
Miami-Hialeah	710+	183	86	22	0	177	177	54	11	76		
Naples	692	115	77	0	38	86	346+	38	38	77		
Ocala	971+	343++	200	29	0	86	286	29	0	56		
Orlando	520	86	72	0	0	191	118	53	0	77		
Panama City	235	0	0	59	0	59	59	59	0	176		
Pensacola	800	127	109	73+	0	218	73	182++	18	217+		
Sarasota	492	81	48	24	0	121	177	24	16	110		
Tallahassee	500	50	50	0	0	250	100	50	0	100		
Tampa	442-	120	38--	10	5	77	125	63	5	137		
West Palm Beach	508	153	44-	11	11	126	120	44	0	96		
East South Central	582	141	83	15	6	147++	114--	66	9	119		
Kentucky	604	165	86	12	8	192+	90-	51	0	85		
Lexington	625	0	83	0	0	250	208	83	0	83		
Louisville	673	192	38	38	0	250+	58	77	19	113		
Owensboro	667	250	0	0	83	250	0	83	0	250		

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Index stay								Number of persons with 1 readmission or more per 1,000 live discharges
Area of residence	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	
Tennessee	505	0.92--	8.70	111--	85	484	298	
Chattanooga	45	0.90	8.24	178	67	45	178	
Clarksville	10	0.80	9.40	200	0	10	300	
Jackson	18	1.79	10.50	167	56	17	471	
Johnson City	25	0.45--	6.44	120	0	25	320	
Knoxville	99	1.39+	7.04	141	101	95	211	
Memphis	83	0.93	11.83	120	120	77	273	
Nashville	75	0.81--	7.31	120	80	73	370	
Alabama	662	1.43++	8.22	186	92	634	289	
Annisston	18	1.37	5.83	111	56	18	222	
Birmingham	165	1.52++	7.62	127	91	156	269	
Dothan	26	2.05+	8.46	346	77	25	320	
Florence	22	1.32	6.95	409+	91	21	476	
Gadsden	11	0.77	9.36	0	0	11	364	
Huntsville	12	0.70	8.00	250	167	12	250	
Mobile	80	1.58++	9.08	213	88	76	329	
Montgomery	41	1.37	6.76	122	146	39	282	
Tuscaloosa	29	2.13++	11.79	276	103	27	259	
Mississippi	258	0.89--	8.38	132	74	246	289	
Biloxi-Gulfport	11	0.61-	5.64	0	91	11	455	
Jackson	34	0.96	8.91	59	88	31	290	
Pascagoula	12	1.40	5.75	167	167	12	667+	
							500	

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

(3) Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges												
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease			Noncardiac vascular events	Infec- tions	Cardiac catheter- ization without revascular- ization	Subsequent PTCA(1)	Subsequent CABG(2)	Other	Number of CABGs(2) per 1,000 procedures(3)	
		Other cardiac events	Cardiac catheter- ization without revascular- ization	Subsequent PTCA(1)								
Tennessee	545	128	50--	14	0	169+	105--	68	10	111		
Chattanooga	489	156	44	0	0	156	133	0	0	89		
Clarksville	500	0	100	0	0	100	300	0	0	100		
Jackson	765	118	59	0	0	412++	176	0	0	111		
Johnson City	520	120	0	40	0	200	40	120	0	200		
Knoxville	495	126	32	11	0	116	105	95	11	172		
Memphis	416	78	52	13	0	130	78	65	0	120		
Nashville	616	96	55	27	0	164	137	96	41	93		
Alabama	628	147	96	19	9	134	137	77	8	137		
Anniston	667	167	111	56	0	222	56	56	0	56		
Birmingham	724+	179	103	19	19	160	160	77	6	109		
Dothan	640	200	200	0	0	0	160	80	0	192		
Florence	667	95	95	95	0	48	143	143	48	227		
Gadsden	545	182	0	91	0	182	0	91	0	91		
Huntsville	667	167	167	0	0	83	167	83	0	333		
Mobile	487	132	79	26	0	66	132	53	0	138		
Montgomery	538	128	0	0	0	103	179	128	0	122		
Tuscaloosa	556	74	111	0	0	148	185	37	0	241		
Mississippi	512	130	110	12	4	89	98	49	20	124		
Biloxi-Gulfport	818	182	182	0	91	91	182	91	0	91		
Jackson	419	32	65	0	0	65	161	32	65	88		
Pascagoula	750	167	417++	0	0	83	0	83	0	83		

(1) Percutaneous transluminal coronary angioplasty.

(2) Coronary artery bypass graft.

(3) Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "--" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Index stay								Number of persons with 1 readmission or more per 1,000 live discharges
Area of residence	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	
West South Central	3,316	1.28++	7.92	145-	84+	3,210	254	349
Arkansas	363	1.13	8.66	154	69	353	249	363
Fayetteville	11	0.93	5.73	182	0	11	182	364
Fort Smith	11	0.51--	6.91	0	0	11	182	364
Little Rock	56	1.10	8.20	232	54	55	218	364
Pine Bluff	5	0.45--	10.40	200	0	5	200	400
Louisiana	648	1.56++	7.85	125--	97+	628	291	393
Alexandria	33	2.39++	7.76	61	121	31	323	355
Baton Rouge	76	1.92++	7.05	171	118	74	284	446
Houma-Thibodaux	39	2.89++	6.21	0--	154	37	432	432
Lafayette	37	2.53++	8.43	270	135	35	171	229
Lake Charles	13	0.79	6.23	77	77	13	538	462
Monroe	2	0.14--	5.00	0	0	2	0	500
New Orleans	200	1.68++	9.04	85--	60	195	297	385
Shreveport	52	1.41	9.54	192	154	49	327	408
Oklahoma	493	1.30++	8.19	181	69	479	253	334
Enid	6	0.73	4.00	167	167	5	200	200
Lawton	16	1.95+	6.13	125	125	15	267	133
Oklahoma City	155	1.75++	8.37	194	58	150	240	333
Tulsa	87	1.22	9.41	161	69	85	259	306

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges											
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease					Cardiac catheterization without revascularization		Subsequent CABG(2)		Number of CABGs(2) per 1,000 procedures(3)
		107--	Other cardiac events	Noncardiac vascular events	Infections	124	Subsequent PTCA(1)	Subsequent CABG(2)	Other		
West South Central	527-		77	13	5		130	62	8	117	
Arkansas	555	110	88	11	8	142	122	71	3	163+	
Fayetteville	545	91	182	0	0	182	0	91	0	273	
Fort Smith	636	273	0	0	0	91	273	0	0	0	
Little Rock	527	36	91	18	0	182	127	73	0	214+	
Pine Bluff	800	200	200	0	0	200	200	0	0	200	
Louisiana	597	108	86	13	2	154+	164	61	10	108	
Alexandria	452	32	97	0	0	161	97	65	0	61	
Baton Rouge	689	68	135	41	0	149	230	54	14	92	
Houma-Thibodaux	486	54	81	0	0	243	108	0	0	0-	
Lafayette	257--	29	29	0	0	57	143	0	0	162	
Lake Charles	615	77	0	0	0	308	77	154	0	231	
Monroe	500	0	0	0	0	0	500	0	0	0	
New Orleans	631	113	118	21	5	154	159	46	15	90	
Shreveport	449	143	20	0	0	122	102	41	20	135	
Oklahoma	503	121	71	19	8	123	117	33--	10	93	
Enid	200	0	0	0	0	200	0	0	0	0	
Lawton	333	200	67	0	0	0	0	67	0	125	
Oklahoma City	513	133	67	20	7	93	140	40	13	123	
Tulsa	447	82	47	24	0	129	94	59	12	80	

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
Texas	1,812	1.23++	7.71	141-	87+	1,750	260	334-
Abilene	10	0.76	8.70	200	0	10	200	400
Amarillo	17	0.89	8.35	118	59	17	176	294
Austin	78	1.64++	8.36	154	77	75	240	280
Beaumont	120	2.84++	8.18	208	125	114	316	404
Brazoria	28	2.24++	8.54	71	36	28	179	286
Brownsville	28	1.39	8.36	143	107	26	385	346
Bryan	7	1.01	5.71	143	0	7	286	857
Corpus Christi	31	1.09	10.32	129	161	30	400	367
Dallas	247	1.44++	7.43	154	61	242	260	293-
El Paso	31	0.83	8.00	161	65	31	129	290
Fort Worth	79	0.81--	6.56	165	63	76	158--	289
Galveston	17	0.88	6.88	0	0	17	294	294
Houston	259	1.38++	7.82	93--	85	250	256	348
Killeen-Temple	30	1.75+	5.73	67	67	30	433	400
Laredo	4	0.48	6.25	0	0	4	750	500
Longview	7	0.34--	4.86	0	143	6	167	333
Lubbock	37	1.95++	9.05	81	108	37	324	432
McAllen	67	2.45++	7.40	194	179++	59	305	288
Midland	3	0.41	4.00	0	0	3	0	0
Odessa	6	0.65	3.67	167	0	6	167	167
San Angelo	15	1.34	5.67	133	133	15	267	333
San Antonio	110	1.02	8.68	200	91	107	299	336
Sherman-Denison	28	1.93+	8.50	71	143	26	269	346
Texarkana	11	0.72	8.55	91	0	11	364	364
Tyler	9	0.49--	9.00	111	111	9	444	667
Victoria	10	1.46	11.00	100	0	10	0	200
Waco	36	1.52	2.75	83	28	36	333	333
Wichita Falls	10	0.69	8.30	400	100	9	333	222

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges									
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease			Noncardiac vascular events	Infec- tions	Cardiac catheter- ization without revascular- ization		Number of CABGs(2) per 1,000 procedures(3)
		102--	74	12			Subsequent PTCA(1)	Subsequent CABG(2)	
Texas	502--								
Abilene	400	0	0	0	0	5	109	69	117
Amarillo	353	0	0	0	0	0	100	300+	300
Austin	387-	67	80	0	0	0	59	118	118
Beaumont	737	219	105	26	0	0	40-	93	167
Brazoria	536	143	71	36	0	9	149	53	100
Brownsville	538	77	77	0	0	0	71	107	143
Bryan	857	0	143	0	0	77+	192	77	143
Corpus Christi	700	133	167	0	0	0	571+	0	0
Dallas	463	83-	58	4	0	0	167	133	161
El Paso	323	32	32	0	0	0	112	74	97
Fort Worth	355-	118	26	26	0	0	97	32	97
Galveston	529	118	59	59	0	0	53	66	127
Houston	492	52--	68	4	0	0	118	0	0
Killeen-Temple	500	100	100	0	0	4	168	76	108
Laredo	1500	333	250	0	0	33	67	67	100
Longview	500	162	27	0	0	0	250	0	0
Lubbock	568	102	102	54	0	0	0	0	0
McAllen	407	0	0	0	0	17	243	54	81
Midland	167	0	0	0	0	0	34	34	119
Odessa	533	267	0	0	0	0	167	0	0
San Angelo	430	84	47	19	0	0	200	67	200
San Antonio	577	192	77	0	0	0	47--	56	173
Sherman-Denison	364	0	0	0	0	0	154	0	36
Texarkana	889	0	0	0	0	91	91	0	91
Tyler	300	111	83	56	0	0	222	222	222
Victoria	611	0	0	0	0	0	200	0	100
Waco	333	0	222	0	0	0	83	28	28
Wichita Falls							111	0	0

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay						Number of persons with 1 readmission or more per 1,000 live discharges
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	
West	6,406	1.41++	5.96	185++	74	6,256	267
Mountain	1,680	1.40++	6.46	174	74	1,644	262
Montana	225	2.31++	5.98	187	71	223	350++
Billings	16	1.32	5.50	250	63	16	188
Great Falls	23	2.53++	7.04	261	87	22	227
Idaho	113	1.03	5.13	204	9--	113	186-
Boise City	23	1.25	4.52	130	0	23	87
Wyoming	48	1.13	6.17	125	21	48	250
Casper	11	2.04	8.00	91	91	11	273
Cheyenne	6	0.87	4.00	0	0	6	167
Colorado	253	0.95-	7.53	170	71	248	306
Boulder-Longmont	7	0.46--	4.71	429	0	7	429
Colorado Springs	32	1.29	7.22	125	63	32	219
Denver	96	0.80--	9.03	208	52	94	223
Fort Collins	27	1.79+	6.96	259	148	26	346
Greeley	24	2.07+	5.71	42	0	24	292
Pueblo	15	0.98	6.53	67	133	14	429
New Mexico	164	1.31+	6.20	122	67	157	248--
Albuquerque	46	1.36	7.04	87	43	44	250
Las Cruces	22	2.35+	4.45	91	45	21	190
Santa Fe	9	1.06	4.33	0	111	9	444

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the $p = 0.05$ level. A "++" or "---" indicates significance at the $p = 0.01$ level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges										
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease	Other cardiac events	Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other	Number of CABGs(2) per 1,000 procedures(3)
West	531-	112--	84	14	7	87--	148	69+	11	112
Mountain	496--	81--	76	14	8	95--	130	72	20++	118
Montana	655	76-	126	27	4	126	175	103	18	129
Billings	563	0	125	0	0	125	63	250+	0	375+
Great Falls	227--	0	45	0	45	45	45	45	0	43
Idaho	451	88	53	9	0	62-	186	44	9	53-
Boise City	391	87	0	0	0	0	174	130	0	130
Wyoming	500	83	146	21	0	146	0--	83	21	104
Casper	364	91	0	0	0	182	0	91	0	91
Cheyenne	167	0	0	167	0	0	0	0	0	0
Colorado	427--	101	40--	20	4	56--	129	69	8	134
Boulder-Longmont	571	143	143	0	143	143	0	0	0	0
Colorado Springs	313-	156	0	0	0	31	63	63	0	94
Denver	394-	74	32	21	0	74	85	96	11	188
Fort Collins	500	77	77	0	0	0	192	115	38	296+
Greeley	333	83	0	42	0	42	125	42	0	83
Pueblo	500	143	0	71	0	0	286	0	0	0
New Mexico	299--	32--	70	0	6	64-	76-	38	13	61-
Albuquerque	250--	45	45	0	0	136	0--	23	0	22
Las Cruces	238--	48	95	0	0	0	48	48	0	45
Santa Fe	778	111	333	0	111	0	111	111	0	111

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
Arizona	527	1.51++	6.50	173	78	515	258	355
Phoenix	272	1.45++	6.03	165	92	261	257	360
Tucson	136	1.93++	7.30	154	74	135	333	407
Utah	211	1.64++	5.91	171	114	204	260	348
Provo-Orem	46	2.86++	4.00	65	65	45	178	356
Salt Lake City	115	1.49++	6.93	200	130+	112	295	384
Nevada	139	1.70++	7.47	230+	86	136	272	338
Las Vegas	78	1.72++	7.33	192	90	77	208	286
Reno	40	2.09++	7.28	350+	25	39	333	410
Pacific	4,726	1.42++	5.79	189++	74	4,612	269	343
Washington	574	1.24++	5.32	293++	66	558	263	346
Bellingham	17	1.25	4.18	412+	118	16	313	313
Bremerton	9	0.58-	6.67	222	0	9	222	333
Olympia	15	1.05	4.60	200	0	15	400	333
Richland	16	1.27	6.75	250	188	16	375	438
Seattle	218	1.36++	5.57	307++	69	210	257	338
Spokane	66	1.60++	5.89	379++	15	66	273	424
Tacoma	55	1.09	5.96	309+	91	53	226	340
Vancouver	10	0.59--	2.50	300	0	10	400	400
Yakima	20	0.88	5.20	250	100	19	316	421
Oregon	341	1.12	5.43	191	76	333	252	339
Eugene	50	1.73++	6.00	220	80	47	213	234-
Medford	24	1.18	7.88	167	42	24	208	292
Portland	94	0.95	4.68	128	128	92	261	402
Salem	16	0.48--	4.19	250	63	16	188	250

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges												
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease			Noncardiac vascular events	Infections	Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other	Number of CABGs(2) per 1,000 procedures(3)	
Arizona Phoenix Tucson	555	103	76	8	8	128	146	64	23+	116		
	498	61--	73	4	4	134	130	61	27+	110		
	696	133	67	7	7	156	207	89	30	140		
Utah Provo-Orem Salt Lake City	431-	54--	49	25+	25+	78	103	69	29+	100		
	378	22-	22	0	22	67	156	67	22	65		
	464	45--	63	36	9	98	107	63	45+	113		
Nevada Las Vegas Reno	500	59--	103	7	7	66-	96	125+	37+	230++		
	390-	39-	52	13	0	65	91	117	13	256++		
	590	103	103	0	0	77	103	154	51	250+		
Pacific	544	123	87	14	7	84--	154+	67	7-	110		
Washington Bellingham Bremerton Olympia Richland Seattle Spokane Tacoma Vancouver Yakima	538	95-	57-	11	4	102	156	109++	4	167++		
	938	188	500++	0	0	125	0	125	0	235		
	556	111	0	0	0	333	0	111	0	333		
	600	67	67	0	0	67	267	133	0	200		
	750	188	188	63	0	63	125	125	0	125		
	543	86	48-	5	10	129	148	110	10	188+		
	561	76	45	0	0	45	273+	121	0	121		
	472	38	38	57	0	75	151	113	0	218+		
	700	100	0	0	0	0	500+	100	0	100		
	842	211	53	0	0	105	263	211	0	250		
Oregon Eugene Medford Portland Salem	471	117	75	6	6	63--	123	78	3	100		
	340-	43	85	0	0	43	128	43	0	60		
	333	125	0	0	0	42	42	125	0	208		
	467	87	87	11	0	76	130	76	0	85		
	375	188	0	0	0	0	125	63	0	188		

(1)Percutaneous transluminal coronary angioplasty.
(2)Coronary artery bypass graft.
(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Area of residence	Index stay					Number of persons with 1 readmission or more per 1,000 live discharges		
	Number of procedures	Number per 1,000 enrollees	Average length of stay in days	Number of persons with 1 event or more per 1,000 procedures	Number of persons dying within 1 year per 1,000 procedures	Number of persons discharged alive	Within 90 days for any cause	With an event
California	3,747	1.51++	5.88	173+	75	3,657	273	343
Anaheim-Santa Ana	267	1.60++	6.24	243++	90	261	307	356
Bakersfield	105	2.33++	5.92	314++	57	103	291	272
Chico	38	1.40	6.47	105	53	36	361	250
Fresno	61	1.04	6.26	131	115	59	322	356
Los Angeles	1,059	1.56++	6.53	178	84	1,033	272	371
Merced	19	1.41	5.11	0	158	19	263	316
Modesto	69	2.05++	5.71	203	116	67	224	239-
Oakland	326	1.73++	5.24	110--	71	318	261	349
Oxnard-Ventura	81	1.64++	4.81	136	37	80	250	325
Redding	27	1.52	4.93	185	37	27	296	296
Riverside	256	1.26+	4.49	152	55	253	296	383
Sacramento	132	1.10	6.33	114	68	128	305	344
Salinas	48	1.65+	5.73	333+	0	48	104--	229-
San Diego	268	1.30++	5.21	172	63	264	223	258--
San Francisco	173	1.06	6.95	220	52	169	249	325
San Jose	161	1.53++	6.51	217	99	154	292	416
Santa Barbara	55	1.45	4.95	109	91	52	192	288
Santa Cruz	61	2.48++	3.92	180	98	59	322	356
Santa Rosa	84	1.88++	6.90	167	119	81	259	358
Stockton	129	3.16++	5.58	85--	93	125	296	312
Vallejo	61	1.70++	4.26	115	66	57	263	316
Visalia	27	0.94	6.19	296	148	27	444	407
Yuba City	19	1.61	4.16	263	53	19	211	421
Alaska	8	0.49--	6.13	125	0	8	0	0
Anchorage	2	0.36	4.50	0	0	2	0	0
Hawaii	56	0.70--	6.70	179	36	56	214	375
Honolulu	45	0.78-	6.38	156	44	45	156-	311

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "--" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Table 4. Percutaneous transluminal coronary angioplasty: Selected statistics on index stay and adverse events during index stay and readmissions for aged Medicare enrollees, by census region and division, State, and metropolitan statistical area: United States, 1986-87 index stays

Number of readmissions with an event per 1,000 live discharges									
Area of residence	Total	Angina, acute myocardial infarction, and other acute and subacute ischemic heart disease			Cardiac catheterization without revascularization	Subsequent PTCA(1)	Subsequent CABG(2)	Other	Number of CABGs(2) per 1,000 procedures(3)
		Other cardiac events	Noncardiac vascular events	Infections					
California	553	129	15	7	84--	157+	61	8	102
Anaheim-Santa Ana	544	123	15	11	92	157	73	0	109
Bakersfield	437	126	78	19	49--	107	49	0	133
Chico	389	139	139	0	28	79	56	0	79
Fresno	576	85	119	0	119	169	68	17	66
Los Angeles	583	126	109+	5	76--	176+	55	15	83-
Merced	579	316	105	0	53	53	53	0	53
Modesto	328--	104	60	0	30-	104	30	0	43
Oakland	547	160	75	6	94	145	41	9	77
Oxnard-Ventura	450	50--	100	0	13--	225	50	13	111
Redding	593	111	37	0	185	74	185	0	222
Riverside	692+	225++	107	12	83	146	99	8	148
Sacramento	570	141	47	8	172	141	55	0	76
Salinas	438	146	83	0	104	83	0	21	104
San Diego	371--	72--	68	8	68--	98	38	0	123
San Francisco	609	130	71	12	124	189	53	6	104
San Jose	701	195	91	13	52--	214	91	13	137
Santa Barbara	404	96	154	0	58	77	19	0	73
Santa Cruz	644	136	220++	0	102	186	0	0	49
Santa Rosa	481	62-	74	0	99	148	99	0	143
Stockton	528	88	48	16	104	192	64	8	93
Vallejo	544	70	88	0	105	175	70	18	115
Visalia	963	0	333++	0	185	296	111	37	148
Yuba City	789	368+	0	0	105	158	105	53	105
Alaska	0-	0	0	0	0	0	0	0	125
Anchorage	0	0	0	0	0	0	0	0	0
Hawaii	500	89	107	0	71	179	36	0	107
Honolulu	422	89	89	0	89	111	44	0	111

(1)Percutaneous transluminal coronary angioplasty.

(2)Coronary artery bypass graft.

(3)Includes index stay and readmissions.

NOTES: Only aged Medicare enrollees who were not members of health maintenance organizations and did not have end stage renal disease are included. A "+" or "-" indicates that the rate is significantly greater or less than the U.S. rate at the p = 0.05 level. A "++" or "---" indicates significance at the p = 0.01 level.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Appendix. Reliability of estimates and testing for significant differences

Introduction

In this compilation of data, procedure-specific event rates are shown, a large number of which are for relatively small areas. As a result, the numbers of discharges, deaths, and enrollees used in the numerators and denominators to calculate the rates can be quite small. Small numbers in the numerator, denominator, or both increase the likelihood that unusually high or low rates will occur merely by chance.

The observed rates are true rates in the sense that they are based on 100 percent of the 1986 enrollees and discharges. That is, they are not estimated from a sample and, thus, are not subject to sampling error in the usual sense. Nevertheless, the rates are random variables, and each observed value is one of many possible values that might have occurred in a particular year for reasons that can only be attributed to chance. Thus, an unusually high 1986 death rate, for example, may be a chance aberration and not indicative of what the rate in that area would be over a period of years.

To the extent that the rates are generated in a temporally stable environment, the standard error could also be used as a measure of the expected variation in rates from year to year. However, some temporal sources of variation, such as periodic influenza epidemics, are not reflected in standard errors that are based on only 1 year of data. Also, the standard error, as calculated here, may not adequately reflect variations resulting from trends, such as a declining death rate.

Two aids are provided to assist the user in identifying rates that may deviate to an important degree from the norm, with small probability that the deviation results from chance. The first aid is a presentation of approximate standard error formulas and tables from which users can assess the reliability of any given rate. The second aid involves testing each area rate against the U.S. rate and annotating area rates that are significantly different. With both aids, rates are treated as though they are estimates based on a sample of enrollees or discharges.

Standard error tables and formulas

Standard errors shown in Table A-1 pertain to measurements of the proportion of a population with an event of interest. They apply to the following estimates:

- Number of persons with one event or more per 1,000 procedures in the index stay.
- Number of persons dying within 1 year per 1,000 procedures.
- Number of persons with one readmission or more for any cause within 90 days per 1,000 persons discharged alive.
- Number of persons with one readmission or more with adverse event(s) per 1,000 persons discharged alive.

The standard error is a function of both the magnitude of the rate and the magnitude of the number of procedures or discharges in the base of the rate. Small rates will have smaller absolute standard errors, but larger relative standard errors, than large rates with the same base. Absolute standard errors are shown in Table A-1. The relative standard error is obtained by dividing the absolute standard error by the rate to which it applies. The degree of reliability required of an estimate depends on how the estimate is used. However, we recommend caution in using estimates with relative standard errors of more than 25 or 30 percent.

Linear interpolation should provide a reasonable approximation of standard errors (SEs) for rates and/or bases not shown in Table A-1. If more accuracy is desired, the following formula can be used to calculate the absolute standard error:

$$SE = \sqrt{R(1,000 - R) / N},$$

where R is the rate for which the standard error is desired and N is the number of procedures or discharges in the base of the rate.

In Table A-2, approximate standard errors of readmissions for various adverse events per 1,000 discharges are shown. (The standard error for average length of stay, which is not a rate, is

discussed next.) The table can be read and interpreted similarly to Table A-1. However, to reduce the number of tables and different formulas needed, the formula used to calculate these standard errors has been generalized in a manner that yields approximate standard errors for specific estimates. The approximation is possible because of the empirical fact that the logarithm of the relvariance of the rates in this compilation is highly correlated with the logarithm of the rates. Thus, a simple linear regression equation can be fit relating

the relvariance (V) to the rate (R). The standard error is then derived as follows:

$$\log V = 0.180909 - 0.92505(\log R),$$

$$V = 10^{\log V},$$

$$SE = R(V)^{1/2} / N^{1/2},$$

where the logarithms are to the base 10 and N is the number of procedures or discharges in the denominator of the rate.

Table A-1. Absolute standard errors for rates per 1,000 discharges or per 1,000 enrollees

Discharges or enrollees in base	Rate per 1,000 discharges or per 1,000 enrollees								
	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
	Standard error								
2,000					0.500	0.548	0.591	0.632	0.671
3,000				0.365	0.408	0.447	0.483	0.516	0.547
4,000			0.274	0.316	0.353	0.387	0.418	0.447	0.474
5,000		0.200	0.245	0.283	0.316	0.346	0.374	0.400	0.424
6,000		0.183	0.224	0.258	0.289	0.316	0.341	0.365	0.387
7,000		0.169	0.207	0.239	0.267	0.293	0.316	0.338	0.358
8,000		0.158	0.194	0.224	0.250	0.274	0.296	0.316	0.335
9,000		0.149	0.183	0.211	0.236	0.258	0.279	0.298	0.316
10,000	0.100	0.141	0.173	0.200	0.224	0.245	0.264	0.283	0.300
20,000	0.071	0.100	0.122	0.141	0.158	0.173	0.187	0.200	0.212
30,000	0.058	0.082	0.100	0.115	0.129	0.141	0.153	0.163	0.173
40,000	0.050	0.071	0.087	0.100	0.112	0.122	0.132	0.141	0.150
50,000	0.045	0.063	0.077	0.089	0.100	0.110	0.118	0.126	0.134
60,000	0.041	0.058	0.071	0.082	0.091	0.100	0.108	0.115	0.122
70,000	0.038	0.053	0.065	0.076	0.084	0.093	0.100	0.107	0.113
80,000	0.035	0.050	0.061	0.071	0.079	0.087	0.094	0.100	0.106
90,000	0.033	0.047	0.058	0.067	0.075	0.082	0.088	0.094	0.100
100,000	0.032	0.045	0.055	0.063	0.071	0.077	0.084	0.089	0.095
200,000	0.022	0.032	0.039	0.045	0.050	0.055	0.059	0.063	0.067
300,000	0.018	0.026	0.032	0.037	0.041	0.045	0.048	0.052	0.055
400,000	0.016	0.022	0.027	0.032	0.035	0.039	0.042	0.045	0.047
500,000	0.014	0.020	0.024	0.028	0.032	0.035	0.037	0.040	0.042
600,000	0.013	0.018	0.022	0.026	0.029	0.032	0.034	0.037	0.039
700,000	0.012	0.017	0.021	0.024	0.027	0.029	0.032	0.034	0.036
800,000	0.011	0.016	0.019	0.022	0.025	0.027	0.030	0.032	0.034
900,000	0.011	0.015	0.018	0.021	0.024	0.026	0.028	0.030	0.032
1,000,000	0.010	0.014	0.017	0.020	0.022	0.024	0.026	0.028	0.030
2,000,000	0.007	0.010	0.012	0.014	0.016	0.017	0.019	0.020	0.021
3,000,000	0.006	0.008	0.010	0.012	0.013	0.014	0.015	0.016	0.017
4,000,000	0.005	0.007	0.009	0.010	0.011	0.012	0.013	0.014	0.015
5,000,000	0.004	0.006	0.008	0.009	0.010	0.011	0.012	0.013	0.013
6,000,000	0.004	0.006	0.007	0.008	0.009	0.010	0.011	0.012	0.012
7,000,000	0.004	0.005	0.007	0.008	0.008	0.009	0.010	0.011	0.011
8,000,000	0.004	0.005	0.006	0.007	0.008	0.009	0.009	0.010	0.011
9,000,000	0.003	0.005	0.006	0.007	0.007	0.008	0.009	0.009	0.010
10,000,000	0.003	0.004	0.005	0.006	0.007	0.008	0.008	0.009	0.009
20,000,000	0.002	0.003	0.004	0.004	0.005	0.005	0.006	0.006	0.007
30,000,000	0.002	0.003	0.003	0.004	0.004	0.004	0.005	0.005	0.005

Table A-1. Absolute standard errors for rates per 1,000 discharges or per 1,000 enrollees—Continued

Discharges or enrollees in base	Rate per 1,000 discharges or per 1,000 enrollees								
	1	2	3	4	5	6	7	8	9
	Standard error								
200					4.987	5.461	5.895	6.299	6.678
300				3.644	4.072	4.459	4.814	5.143	5.453
400			2.735	3.156	3.527	3.861	4.169	4.454	4.722
500		1.998	2.446	2.823	3.154	3.454	3.729	3.984	4.224
600		1.824	2.233	2.577	2.880	3.153	3.404	3.637	3.856
700		1.689	2.067	2.386	2.666	2.919	3.151	3.367	3.570
800		1.580	1.934	2.232	2.494	2.730	2.948	3.150	3.339
900		1.489	1.823	2.104	2.351	2.574	2.779	2.969	3.148
1,000	0.999	1.413	1.729	1.996	2.230	2.442	2.636	2.817	2.986
2,000	0.707	0.999	1.223	1.411	1.577	1.727	1.864	1.992	2.112
3,000	0.577	0.816	0.998	1.152	1.288	1.410	1.522	1.626	1.724
4,000	0.500	0.706	0.865	0.998	1.115	1.221	1.318	1.409	1.493
5,000	0.447	0.632	0.773	0.893	0.997	1.092	1.179	1.260	1.336
6,000	0.408	0.577	0.706	0.815	0.911	0.997	1.076	1.150	1.219
7,000	0.378	0.534	0.654	0.754	0.843	0.923	0.996	1.065	1.129
8,000	0.353	0.499	0.611	0.706	0.789	0.863	0.932	0.996	1.056
9,000	0.333	0.471	0.576	0.665	0.743	0.814	0.879	0.939	0.995
10,000	0.316	0.447	0.547	0.631	0.705	0.772	0.834	0.891	0.944
20,000	0.223	0.316	0.387	0.446	0.499	0.546	0.590	0.630	0.668
30,000	0.182	0.258	0.316	0.364	0.407	0.446	0.481	0.514	0.545
40,000	0.158	0.223	0.273	0.316	0.353	0.386	0.417	0.445	0.472
50,000	0.141	0.200	0.245	0.282	0.315	0.345	0.373	0.398	0.422
60,000	0.129	0.182	0.223	0.258	0.288	0.315	0.340	0.364	0.386
70,000	0.119	0.169	0.207	0.239	0.267	0.292	0.315	0.337	0.357
80,000	0.112	0.158	0.193	0.223	0.249	0.273	0.295	0.315	0.334
90,000	0.105	0.149	0.182	0.210	0.235	0.257	0.278	0.297	0.315
100,000	0.100	0.141	0.173	0.200	0.223	0.244	0.264	0.282	0.299
200,000	0.071	0.100	0.122	0.141	0.158	0.173	0.186	0.199	0.211
300,000	0.058	0.082	0.100	0.115	0.129	0.141	0.152	0.163	0.172
400,000	0.050	0.071	0.086	0.100	0.112	0.122	0.132	0.141	0.149
500,000	0.045	0.063	0.077	0.089	0.100	0.109	0.118	0.126	0.134
600,000	0.041	0.058	0.071	0.081	0.091	0.100	0.108	0.115	0.122
700,000	0.038	0.053	0.065	0.075	0.084	0.092	0.100	0.106	0.113
800,000	0.035	0.050	0.061	0.071	0.079	0.086	0.093	0.100	0.106
900,000	0.033	0.047	0.058	0.067	0.074	0.081	0.088	0.094	0.100
1,000,000	0.032	0.045	0.055	0.063	0.071	0.077	0.083	0.089	0.094
2,000,000	0.022	0.032	0.039	0.045	0.050	0.055	0.059	0.063	0.067
3,000,000	0.018	0.026	0.032	0.036	0.041	0.045	0.048	0.051	0.055
4,000,000	0.016	0.022	0.027	0.032	0.035	0.039	0.042	0.045	0.047
5,000,000	0.014	0.020	0.024	0.028	0.032	0.035	0.037	0.040	0.042
6,000,000	0.013	0.018	0.022	0.026	0.029	0.032	0.034	0.036	0.039
7,000,000	0.012	0.017	0.021	0.024	0.027	0.029	0.032	0.034	0.036
8,000,000	0.011	0.016	0.019	0.022	0.025	0.027	0.029	0.031	0.033
9,000,000	0.011	0.015	0.018	0.021	0.024	0.026	0.028	0.030	0.031
10,000,000	0.010	0.014	0.017	0.020	0.022	0.024	0.026	0.028	0.030
20,000,000	0.007	0.010	0.012	0.014	0.016	0.017	0.019	0.020	0.021
30,000,000	0.006	0.008	0.010	0.012	0.013	0.014	0.015	0.016	0.017

Table A-1. Absolute standard errors for rates per 1,000 discharges or per 1,000 enrollees—Continued

Discharges or enrollees in base	Rate per 1,000 discharges or per 1,000 enrollees								
	10	20	30	40	50	60	70	80	90
	Standard error								
20					48.734	53.104	57.053	60.663	63.992
30				35.777	39.791	43.359	46.583	49.531	52.249
40			26.972	30.984	34.460	37.550	40.342	42.895	45.249
50		19.799	24.125	27.713	30.822	33.586	36.083	38.367	40.472
60		18.074	22.023	25.298	28.137	30.659	32.939	35.024	36.946
70		16.733	20.389	23.422	26.049	28.385	30.496	32.426	34.205
80		15.652	19.072	21.909	24.367	26.552	28.526	30.331	31.996
90		14.757	17.981	20.656	22.973	25.033	26.895	28.597	30.166
100	9.950	14.000	17.059	19.596	21.794	23.749	25.515	27.129	28.618
200	7.036	9.899	12.062	13.856	15.411	16.793	18.042	19.183	20.236
300	5.745	8.083	9.849	11.314	12.583	13.711	14.731	15.663	16.523
400	4.975	7.000	8.529	9.798	10.897	11.874	12.757	13.565	14.309
500	4.450	6.261	7.629	8.764	9.747	10.621	11.411	12.133	12.798
600	4.062	5.715	6.964	8.000	8.898	9.695	10.416	11.075	11.683
700	3.761	5.292	6.448	7.407	8.238	8.976	9.644	10.254	10.817
800	3.518	4.950	6.031	6.928	7.706	8.396	9.021	9.592	10.118
900	3.317	4.667	5.686	6.532	7.265	7.916	8.505	9.043	9.539
1,000	3.146	4.427	5.394	6.197	6.892	7.510	8.068	8.579	9.050
2,000	2.225	3.130	3.814	4.382	4.873	5.310	5.705	6.066	6.399
3,000	1.817	2.556	3.114	3.578	3.979	4.336	4.658	4.953	5.225
4,000	1.573	2.214	2.697	3.098	3.446	3.755	4.034	4.290	4.525
5,000	1.407	1.980	2.412	2.771	3.082	3.359	3.608	3.837	4.047
6,000	1.285	1.807	2.202	2.530	2.814	3.066	3.294	3.502	3.695
7,000	1.189	1.673	2.039	2.342	2.605	2.839	3.050	3.243	3.421
8,000	1.112	1.565	1.907	2.191	2.437	2.655	2.853	3.033	3.200
9,000	1.049	1.476	1.798	2.066	2.297	2.503	2.689	2.860	3.017
10,000	0.995	1.400	1.706	1.960	2.179	2.375	2.551	2.713	2.862
20,000	0.704	0.990	1.206	1.386	1.541	1.679	1.804	1.918	2.024
30,000	0.574	0.808	0.985	1.131	1.258	1.371	1.473	1.566	1.652
40,000	0.497	0.700	0.853	0.980	1.090	1.187	1.276	1.356	1.431
50,000	0.445	0.626	0.763	0.876	0.975	1.062	1.141	1.213	1.280
60,000	0.406	0.572	0.696	0.800	0.890	0.970	1.042	1.108	1.168
70,000	0.376	0.529	0.645	0.741	0.824	0.898	0.964	1.025	1.082
80,000	0.352	0.495	0.603	0.693	0.771	0.840	0.902	0.959	1.012
90,000	0.332	0.467	0.569	0.653	0.726	0.792	0.850	0.904	0.954
100,000	0.315	0.443	0.539	0.620	0.689	0.751	0.807	0.858	0.905
200,000	0.222	0.313	0.381	0.438	0.487	0.531	0.571	0.607	0.640
300,000	0.182	0.256	0.311	0.358	0.398	0.434	0.466	0.495	0.522
400,000	0.157	0.221	0.270	0.310	0.345	0.375	0.403	0.429	0.452
500,000	0.141	0.198	0.241	0.277	0.308	0.336	0.361	0.384	0.405
600,000	0.128	0.181	0.220	0.253	0.281	0.307	0.329	0.350	0.369
700,000	0.119	0.167	0.204	0.234	0.260	0.284	0.305	0.324	0.342
800,000	0.111	0.157	0.191	0.219	0.244	0.266	0.285	0.303	0.320
900,000	0.105	0.148	0.180	0.207	0.230	0.250	0.269	0.286	0.302
1,000,000	0.099	0.140	0.171	0.196	0.218	0.237	0.255	0.271	0.286
2,000,000	0.070	0.099	0.121	0.139	0.154	0.168	0.180	0.192	0.202
3,000,000	0.057	0.081	0.098	0.113	0.126	0.137	0.147	0.157	0.165
4,000,000	0.050	0.070	0.085	0.098	0.109	0.119	0.128	0.136	0.143
5,000,000	0.044	0.063	0.076	0.088	0.097	0.106	0.114	0.121	0.128
6,000,000	0.041	0.057	0.070	0.080	0.089	0.097	0.104	0.111	0.117
7,000,000	0.038	0.053	0.064	0.074	0.082	0.090	0.096	0.103	0.108
8,000,000	0.035	0.049	0.060	0.069	0.077	0.084	0.090	0.096	0.101
9,000,000	0.033	0.047	0.057	0.065	0.073	0.079	0.085	0.090	0.095
10,000,000	0.031	0.044	0.054	0.062	0.069	0.075	0.081	0.086	0.090
20,000,000	0.022	0.031	0.038	0.044	0.049	0.053	0.057	0.061	0.064
30,000,000	0.018	0.026	0.031	0.036	0.040	0.043	0.047	0.050	0.052

Table A-1. Absolute standard errors for rates per 1,000 discharges or per 1,000 enrollees—Continued

Discharges or enrollees in base	Rate per 1,000 discharges or per 1,000 enrollees				
	100	200	300	400	500
	Standard error				
10	94.868	126.491	144.914	154.919	158.114
20	67.082	89.443	102.469	109.545	111.803
30	54.772	73.030	83.666	89.443	91.287
40	47.434	63.246	72.457	77.460	79.057
50	42.426	56.569	64.807	69.282	70.711
60	38.730	51.640	59.161	63.246	64.550
70	35.857	47.809	54.772	58.554	59.761
80	33.541	44.721	51.235	54.772	55.902
90	31.623	42.164	48.305	51.640	52.705
100	30.000	40.000	45.826	48.990	50.000
200	21.213	28.284	32.404	34.641	35.355
300	17.321	23.094	26.458	28.284	28.868
400	15.000	20.000	22.913	24.495	25.000
500	13.416	17.889	20.494	21.909	22.361
600	12.247	16.330	18.708	20.000	20.412
700	11.339	15.119	17.321	18.516	18.898
800	10.607	14.142	16.202	17.321	17.678
900	10.000	13.333	15.275	16.330	16.667
1,000	9.487	12.649	14.491	15.492	15.811
2,000	6.708	8.944	10.247	10.954	11.180
3,000	5.477	7.303	8.367	8.944	9.129
4,000	4.743	6.325	7.246	7.746	7.906
5,000	4.243	5.657	6.481	6.928	7.071
6,000	3.873	5.164	5.916	6.325	6.455
7,000	3.586	4.781	5.477	5.855	5.976
8,000	3.354	4.472	5.123	5.477	5.590
9,000	3.162	4.216	4.830	5.164	5.270
10,000	3.000	4.000	4.583	4.899	5.000
20,000	2.121	2.828	3.240	3.464	3.536
30,000	1.732	2.309	2.646	2.828	2.887
40,000	1.500	2.000	2.291	2.449	2.500
50,000	1.342	1.789	2.049	2.191	2.236
60,000	1.225	1.633	1.871	2.000	2.041
70,000	1.134	1.512	1.732	1.852	1.890
80,000	1.061	1.414	1.620	1.732	1.768
90,000	1.000	1.333	1.528	1.633	1.667
100,000	0.949	1.265	1.449	1.549	1.581
200,000	0.671	0.894	1.025	1.095	1.118
300,000	0.548	0.730	0.837	0.894	0.913
400,000	0.474	0.632	0.725	0.775	0.791
500,000	0.424	0.566	0.648	0.693	0.707
600,000	0.387	0.516	0.592	0.632	0.645
700,000	0.359	0.478	0.548	0.586	0.598
800,000	0.335	0.447	0.512	0.548	0.559
900,000	0.316	0.422	0.483	0.516	0.527
1,000,000	0.300	0.400	0.458	0.490	0.500
2,000,000	0.212	0.283	0.324	0.346	0.354
3,000,000	0.173	0.231	0.265	0.283	0.289
4,000,000	0.150	0.200	0.229	0.245	0.250
5,000,000	0.134	0.179	0.205	0.219	0.224
6,000,000	0.122	0.163	0.187	0.200	0.204
7,000,000	0.113	0.151	0.173	0.185	0.189
8,000,000	0.106	0.141	0.162	0.173	0.177
9,000,000	0.100	0.133	0.153	0.163	0.167
10,000,000	0.095	0.126	0.145	0.155	0.158
20,000,000	0.067	0.089	0.102	0.110	0.112
30,000,000	0.055	0.073	0.084	0.089	0.091

Table A-2. Approximate standard errors for readmissions for adverse events per 1,000 live discharges

Discharges in base	Events per 1,000 discharges								
	1	2	3	4	5	6	7	8	9
	Standard error								
1	1.232	1.788	2.223	2.594	2.925	3.226	3.505	3.766	4.012
2	0.871	1.264	1.572	1.835	2.068	2.281	2.478	2.663	2.837
3	0.711	1.032	1.283	1.498	1.689	1.863	2.024	2.174	2.316
4	0.616	0.894	1.111	1.297	1.463	1.613	1.752	1.883	2.006
5	0.551	0.799	0.994	1.160	1.308	1.443	1.567	1.684	1.794
6	0.503	0.730	0.907	1.059	1.194	1.317	1.431	1.537	1.638
7	0.465	0.676	0.840	0.981	1.106	1.219	1.325	1.423	1.516
8	0.435	0.632	0.786	0.917	1.034	1.141	1.239	1.331	1.418
9	0.411	0.596	0.741	0.865	0.975	1.075	1.168	1.255	1.337
10	0.389	0.565	0.703	0.820	0.925	1.020	1.108	1.191	1.269
20	0.275	0.400	0.497	0.580	0.654	0.721	0.784	0.842	0.897
30	0.225	0.326	0.406	0.474	0.534	0.589	0.640	0.688	0.732
40	0.195	0.283	0.351	0.410	0.462	0.510	0.554	0.595	0.634
50	0.174	0.253	0.314	0.367	0.414	0.456	0.496	0.533	0.567
60	0.159	0.231	0.287	0.335	0.378	0.417	0.452	0.486	0.518
70	0.147	0.214	0.266	0.310	0.350	0.386	0.419	0.450	0.479
80	0.138	0.200	0.249	0.290	0.327	0.361	0.392	0.421	0.449
90	0.130	0.188	0.234	0.273	0.308	0.340	0.369	0.397	0.423
100	0.123	0.179	0.222	0.259	0.293	0.323	0.350	0.377	0.401
200	0.087	0.126	0.157	0.183	0.207	0.228	0.248	0.266	0.284
300	0.071	0.103	0.128	0.150	0.169	0.186	0.202	0.217	0.232
400	0.062	0.089	0.111	0.130	0.146	0.161	0.175	0.188	0.201
500	0.055	0.080	0.099	0.116	0.131	0.144	0.157	0.168	0.179
600	0.050	0.073	0.091	0.106	0.119	0.132	0.143	0.154	0.164
700	0.047	0.068	0.084	0.098	0.111	0.122	0.132	0.142	0.152
800	0.044	0.063	0.079	0.092	0.103	0.114	0.124	0.133	0.142
900	0.041	0.060	0.074	0.086	0.098	0.108	0.117	0.126	0.134
1,000	0.039	0.057	0.070	0.082	0.092	0.102	0.111	0.119	0.127
2,000	0.028	0.040	0.050	0.058	0.065	0.072	0.078	0.084	0.090
3,000	0.022	0.033	0.041	0.047	0.053	0.059	0.064	0.069	0.073
4,000	0.019	0.028	0.035	0.041	0.046	0.051	0.055	0.060	0.063
5,000	0.017	0.025	0.031	0.037	0.041	0.046	0.050	0.053	0.057
6,000	0.016	0.023	0.029	0.033	0.038	0.042	0.045	0.049	0.052
7,000	0.015	0.021	0.027	0.031	0.035	0.039	0.042	0.045	0.048
8,000	0.014	0.020	0.025	0.029	0.033	0.036	0.039	0.042	0.045
9,000	0.013	0.019	0.023	0.027	0.031	0.034	0.037	0.040	0.042
10,000	0.012	0.018	0.022	0.026	0.029	0.032	0.035	0.038	0.040
20,000	0.009	0.013	0.016	0.018	0.021	0.023	0.025	0.027	0.028
30,000	0.007	0.010	0.013	0.015	0.017	0.019	0.020	0.022	0.023
40,000	0.006	0.009	0.011	0.013	0.015	0.016	0.018	0.019	0.020
50,000	0.006	0.008	0.010	0.012	0.013	0.014	0.016	0.017	0.018
60,000	0.005	0.007	0.009	0.011	0.012	0.013	0.014	0.015	0.016
70,000	0.005	0.007	0.008	0.010	0.011	0.012	0.013	0.014	0.015
80,000	0.004	0.006	0.008	0.009	0.010	0.011	0.012	0.013	0.014
90,000	0.004	0.006	0.007	0.009	0.010	0.011	0.012	0.013	0.013
100,000	0.004	0.006	0.007	0.008	0.009	0.010	0.011	0.012	0.013

Table A-2. Approximate standard errors for readmissions for adverse events per 1,000 live discharges
—Continued

Discharges in base	Events per 1,000 discharges								
	10	20	30	40	50	60	70	80	90
	Standard error								
1	4.246	6.162	7.663	8.944	10.083	11.122	12.082	12.981	13.830
2	3.002	4.357	5.418	6.324	7.130	7.864	8.543	9.179	9.779
3	2.451	3.558	4.424	5.164	5.822	6.421	6.976	7.495	7.985
4	2.123	3.081	3.831	4.472	5.042	5.561	6.041	6.491	6.915
5	1.899	2.756	3.427	4.000	4.509	4.974	5.403	5.805	6.185
6	1.733	2.516	3.128	3.651	4.117	4.540	4.933	5.300	5.646
7	1.605	2.329	2.896	3.380	3.811	4.204	4.567	4.906	5.227
8	1.501	2.179	2.709	3.162	3.565	3.932	4.272	4.590	4.890
9	1.415	2.054	2.554	2.981	3.361	3.707	4.027	4.327	4.610
10	1.343	1.949	2.423	2.828	3.189	3.517	3.821	4.105	4.373
20	0.949	1.378	1.713	2.000	2.255	2.487	2.702	2.903	3.092
30	0.775	1.125	1.399	1.633	1.841	2.031	2.206	2.370	2.525
40	0.671	0.974	1.212	1.414	1.594	1.758	1.910	2.053	2.187
50	0.600	0.871	1.084	1.265	1.426	1.573	1.709	1.836	1.956
60	0.548	0.796	0.989	1.155	1.302	1.436	1.560	1.676	1.785
70	0.507	0.737	0.916	1.069	1.205	1.329	1.444	1.552	1.653
80	0.475	0.689	0.857	1.000	1.127	1.243	1.351	1.451	1.546
90	0.448	0.650	0.808	0.943	1.063	1.172	1.274	1.368	1.458
100	0.425	0.616	0.766	0.894	1.008	1.112	1.208	1.298	1.383
200	0.300	0.436	0.542	0.632	0.713	0.786	0.854	0.918	0.978
300	0.245	0.356	0.442	0.516	0.582	0.642	0.698	0.749	0.798
400	0.212	0.308	0.383	0.447	0.504	0.556	0.604	0.649	0.691
500	0.190	0.276	0.343	0.400	0.451	0.497	0.540	0.581	0.618
600	0.173	0.252	0.313	0.365	0.412	0.454	0.493	0.530	0.565
700	0.160	0.233	0.290	0.338	0.381	0.420	0.457	0.491	0.523
800	0.150	0.218	0.271	0.316	0.357	0.393	0.427	0.459	0.489
900	0.142	0.205	0.255	0.298	0.336	0.371	0.403	0.433	0.461
1,000	0.134	0.195	0.242	0.283	0.319	0.352	0.382	0.411	0.437
2,000	0.095	0.138	0.171	0.200	0.225	0.249	0.270	0.290	0.309
3,000	0.078	0.113	0.140	0.163	0.184	0.203	0.221	0.237	0.252
4,000	0.067	0.097	0.121	0.141	0.159	0.176	0.191	0.205	0.219
5,000	0.060	0.087	0.108	0.126	0.143	0.157	0.171	0.184	0.196
6,000	0.055	0.080	0.099	0.115	0.130	0.144	0.156	0.168	0.179
7,000	0.051	0.074	0.092	0.107	0.121	0.133	0.144	0.155	0.165
8,000	0.047	0.069	0.086	0.100	0.113	0.124	0.135	0.145	0.155
9,000	0.045	0.065	0.081	0.094	0.106	0.117	0.127	0.137	0.146
10,000	0.042	0.062	0.077	0.089	0.101	0.111	0.121	0.130	0.138
20,000	0.030	0.044	0.054	0.063	0.071	0.079	0.085	0.092	0.098
30,000	0.025	0.036	0.044	0.052	0.058	0.064	0.070	0.075	0.080
40,000	0.021	0.031	0.038	0.045	0.050	0.056	0.060	0.065	0.069
50,000	0.019	0.028	0.034	0.040	0.045	0.050	0.054	0.058	0.062
60,000	0.017	0.025	0.031	0.037	0.041	0.045	0.049	0.053	0.056
70,000	0.016	0.023	0.029	0.034	0.038	0.042	0.046	0.049	0.052
80,000	0.015	0.022	0.027	0.032	0.036	0.039	0.043	0.046	0.049
90,000	0.014	0.021	0.026	0.030	0.034	0.037	0.040	0.043	0.046
100,000	0.013	0.019	0.024	0.028	0.032	0.035	0.038	0.041	0.044

Table A-2. Approximate standard errors for readmissions for adverse events per 1,000 live discharges
—Continued

Discharges in base	Events per 1,000 discharges								
	100	200	300	400	500	600	700	800	900
	Standard error								
1	14.635	21.242	26.415	30.832	34.760	38.339	41.651	44.750	47.675
2	10.349	15.021	18.678	21.801	24.579	27.110	29.452	31.643	33.711
3	8.450	12.264	15.251	17.801	20.069	22.135	24.047	25.836	27.525
4	7.318	10.621	13.207	15.416	17.380	19.170	20.825	22.375	23.837
5	6.545	9.500	11.813	13.788	15.545	17.146	18.627	20.013	21.321
6	5.975	8.672	10.784	12.587	14.191	15.652	17.004	18.269	19.463
7	5.532	8.029	9.984	11.653	13.138	14.491	15.743	16.914	18.019
8	5.174	7.510	9.339	10.901	12.290	13.555	14.726	15.822	16.856
9	4.878	7.081	8.805	10.277	11.587	12.780	13.884	14.917	15.892
10	4.628	6.717	8.353	9.750	10.992	12.124	13.171	14.151	15.076
20	3.273	4.750	5.907	6.894	7.773	8.573	9.313	10.006	10.660
30	2.672	3.878	4.823	5.629	6.346	7.000	7.604	8.170	8.704
40	2.314	3.359	4.177	4.875	5.496	6.062	6.586	7.076	7.538
50	2.070	3.004	3.736	4.360	4.916	5.422	5.890	6.329	6.742
60	1.889	2.742	3.410	3.980	4.488	4.950	5.377	5.777	6.155
70	1.749	2.539	3.157	3.685	4.155	4.582	4.978	5.349	5.698
80	1.636	2.375	2.953	3.447	3.886	4.286	4.657	5.003	5.330
90	1.543	2.239	2.784	3.250	3.664	4.041	4.390	4.717	5.025
100	1.464	2.124	2.641	3.083	3.476	3.834	4.165	4.475	4.767
200	1.035	1.502	1.868	2.180	2.458	2.711	2.945	3.164	3.371
300	0.845	1.226	1.525	1.780	2.007	2.214	2.405	2.584	2.752
400	0.732	1.062	1.321	1.542	1.738	1.917	2.083	2.238	2.384
500	0.655	0.950	1.181	1.379	1.555	1.715	1.863	2.001	2.132
600	0.597	0.867	1.078	1.259	1.419	1.565	1.700	1.827	1.946
700	0.553	0.803	0.998	1.165	1.314	1.449	1.574	1.691	1.802
800	0.517	0.751	0.934	1.090	1.229	1.355	1.473	1.582	1.686
900	0.488	0.708	0.880	1.028	1.159	1.278	1.388	1.492	1.589
1,000	0.463	0.672	0.835	0.975	1.099	1.212	1.317	1.415	1.508
2,000	0.327	0.475	0.591	0.689	0.777	0.857	0.931	1.001	1.066
3,000	0.267	0.388	0.482	0.563	0.635	0.700	0.760	0.817	0.870
4,000	0.231	0.336	0.418	0.487	0.550	0.606	0.659	0.708	0.754
5,000	0.207	0.300	0.374	0.436	0.492	0.542	0.589	0.633	0.674
6,000	0.189	0.274	0.341	0.398	0.449	0.495	0.538	0.578	0.615
7,000	0.175	0.254	0.316	0.369	0.415	0.458	0.498	0.535	0.570
8,000	0.164	0.237	0.295	0.345	0.389	0.429	0.466	0.500	0.533
9,000	0.154	0.224	0.278	0.325	0.366	0.404	0.439	0.472	0.503
10,000	0.146	0.212	0.264	0.308	0.348	0.383	0.417	0.448	0.477
20,000	0.103	0.150	0.187	0.218	0.246	0.271	0.295	0.316	0.337
30,000	0.084	0.123	0.153	0.178	0.201	0.221	0.240	0.258	0.275
40,000	0.073	0.106	0.132	0.154	0.174	0.192	0.208	0.224	0.238
50,000	0.065	0.095	0.118	0.138	0.155	0.171	0.186	0.200	0.213
60,000	0.060	0.087	0.108	0.126	0.142	0.157	0.170	0.183	0.195
70,000	0.055	0.080	0.100	0.117	0.131	0.145	0.157	0.169	0.180
80,000	0.052	0.075	0.093	0.109	0.123	0.136	0.147	0.158	0.169
90,000	0.049	0.071	0.088	0.103	0.116	0.128	0.139	0.149	0.159
100,000	0.046	0.067	0.084	0.097	0.110	0.121	0.132	0.142	0.151

Standard errors of average length of stay

Standard errors for average length of stay (ALOS) are not given in this compilation. However, it has been observed that the coefficient of variation (CV) for ALOS tends to be consistent across areas. The CVs for ALOS calculated for all areas for the 10 procedures are shown in Table A-3. These CVs can be used to calculate an approximate standard error for a specific estimate of ALOS using the following formula:

$$SE = (ALOS)(CV)/N^{1/2}.$$

Comparison of area rates with U.S. rates

Area rates shown in Tables 3 and 4 for each procedure have been annotated to show when the difference between the area rate and the U.S. rate is significant at the 0.01 and 0.05 levels. A significance level of 0.01 (0.05) means that, if samples of the same size are repeatedly drawn from two populations with identical rates and the significance test for each sample is performed, a significant difference will be incorrectly declared in 1 (5) out of every 100 samples. Rates with a minus sign are significantly lower than the U.S. rate at the 0.05 level, and rates with a plus sign are significantly higher at that level. Rates with double signs (“++” or “--”) are significantly different at the 0.01 level. The intent of this annotation is to highlight for the user rates that may be unusually high or low while taking into account the element of chance. Rates without a sign could also be

Table A-3. Coefficient of variation for average length of stay for selected procedures performed on aged Medicare enrollees: United States, 1986

Procedure	Coefficient of variation
Total hip replacement	0.49
Total knee replacement	0.45
Reduction of fracture of the femur:	
Petrochanteric	0.83
Transcervical	1.00
Replacement of the head of the femur	0.92
Total cholecystectomy	0.73
Partial excision of the large intestine:	
With cancer	0.72
Without cancer	0.81
Coronary artery bypass graft ¹	0.77
Percutaneous transluminal coronary angioplasty ¹	0.91

¹For period October 1986-June 1987.

NOTE: Members of health maintenance organizations and persons with end stage renal disease are excluded.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

unusually high or low, but the lack of a sign is intended to serve as a warning of a high standard error.

Rates with 10 events or more

For each comparison of an area rate with 10 events or more in the numerator, a two-tailed normal theory test for the difference between two rates was used. This approach means that, for every 100 comparisons made, one erroneously declared significant difference can be expected (a type I error) at the 0.01 level and five erroneously declared significant differences can be expected at the 0.05 level. Given the thousands of comparisons made in this data compilation, one can expect that many such errors have been made. On the other hand, alternative approaches, such as use of one of the multiple comparison tests, would place greater overall control on the type I error at the expense of decreasing the power to detect differences that may, in fact, be real (a type II error). Thus, we emphasize that the significance tests are to be viewed primarily as screening devices to identify rates that may be unusually high or low for reasons other than chance variation.

For the purpose of annotating the rates, it was assumed that the standard error of the U.S. rate was negligible; i.e., in the following formula, S_1 was set equal to 0. In general, this formula can be used to carry out tests on other pairs of rates:

$$z = (R_1 - R_2) / \sqrt{S_1^2 + S_2^2},$$

where R_1 and R_2 are the two rates being compared, and S_1 and S_2 are their respective standard errors, as defined earlier in this section. The calculated z can be applied to a table of areas under the normal curve to find a p -value.

Rates with less than 10 events

For area rates with numerators of less than 10 events, the Poisson distribution was assumed to be applicable and its frequency function was used to calculate the probability of a difference. This was accomplished by multiplying the U.S. rate (divided by 1,000) by the number of procedures or discharges in the denominator of the area rate. The resulting product was taken to be the expected area rate. When the expected number of events exceeded the actual number of events, the expected number of events was used as the mean in the Poisson frequency function to calculate the probabilities of 0, 1, 2, . . . , x , where x is the actual number of area events. If the sum of these probabilities was less than 0.005, then two minus signs were appended to the area rate. If the sum of probabilities was greater than or equal to 0.005 and

less than 0.025, one minus sign was appended to the area rate. When the expected number of events was less than the actual number, a similar procedure was followed, summing probabilities

from 0 to $1 - x$, comparing 1 minus that sum with the critical values, and appending no, one, or two plus signs according to the outcome of that comparison.

U.S. Department of Health and Human Services

Louis W. Sullivan, M.D., *Secretary*

Health Care Financing Administration

Gail R. Wilensky, Ph.D., *Administrator*

Office of Research and Demonstrations

Joseph R. Antos, Ph.D., *Director*

Thomas M. Kickham, Ph.D., *Deputy Director*

Office of Research

George J. Schieber, Ph.D., *Director*

Division of Beneficiary Studies

Marian E. Gornick, *Director*

Analytical Studies Branch

James D. Lubitz, *Chief*

Publications and Information Resources

Gerri Michael-Dyer, *Chief*

Doris Hall Simmons, *Managing Editor*

Eleanor Janice Collins, Ed Olshaker,

Margaret Rutherford, *Copy Editors*

Requests to be placed on our mailing list to receive notification of future publications as they become available should be sent to: Health Care Financing Administration, Office of Research and Demonstrations, Publications and Information Resources, Room 1-A-9 Oak Meadows Building, 6325 Security Boulevard, Baltimore, Maryland 21207.

**U.S. Department of
Health and Human Services
1A9 Oak Meadows Building
6325 Security Boulevard
Baltimore, Maryland 21207**

CMS LIBRARY



3 8095 00012093 7